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WESTERN ILLINOIS REGIONAL STUDIES

VOLUME VII FALL 1984 NUMBER 2

CONTENTS

Special Issue: Waterways in Western Illinois Donald W. Griffin, editor

The Warsaw Boat Yard
William L. Talbot 5

The Way It Used To Be: Folklore of the River Men
Philibert Hoebing
John Schleppenbach 18

The Night of the *Prairie Belle*
James V. Swift 30

The Hennepin Canal: New Life for an Old Waterway
Gerald A. Newton
John A. McFarland
Donald W. Griffin 34

Taming the Rapids of the Upper Misssissippi
Roald D. Tweet 47

The Illinois Waterway
Vernon F. Barr 77

Notes and Documents 87

Reviews of Books 89

Contributors 99

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REVIEWS OF BOOKS

Sandburg, EVER THE WINDS OF CHANCE
By Douglas L. Wilson 89

Hallwas, WESTERN ILLINOIS HERITAGE
By Roger D. Launius 92

Noe, SUSAN GLASPELL: VOICE FROM THE HEARTLAND
By Gerhard Bach 95

Long and Erickson, CLINTON, A PICTORIAL HISTORY
By William Roba 98

THE WARSAW BOAT YARD

William L. Talbot

In 1856, Andrew J. Wiard and his family settled themselves in the busy little western Illinois town of Warsaw on the Mississippi River.[1] Warsaw was a progressive frontier town and was glad to see Andrew Wiard since he was a photographer and a dentist and was soon advertising that he could make ambrotypes and daguerreotypes, as well as do dental work, for the local populace. In addition to his ability as a photographer and dentist, he and his father, who also came to Warsaw, had an interest in boat building that was soon to become known. Today, unfortunately, we do not know very much about the Wiards except what can be gleaned from the Warsaw newspapers. It is not known how or why the boat yard was established except that Andrew's father, who must have had some knowledge about boat building, was involved in its operation.

A.J. Wiard was a native of Pennsylvania and may have learned boat building while living in the Keystone State where many steamboats and other types of boats were built from the earliest days.[2] Beside the Wiards knowledge about boat building, another ingredient was a fine sawmill near the river in lower Warsaw that was operated by Henry Leyhe and his two growing sons, Henry and William.[3] It is not known just where the Wiard boat yard was located, but most likely it was near the river bank not very far from the Leyhe sawmill. Soon, a few small craft were being constructed and making their appearance along the river bank at Warsaw and its neighbor across the river in Missouri, Alexandria. Wiard boats must have been considered very well built craft as their reputation extended along the river as far south as New Orleans.

Early in June of 1858 posters were seen around a few nearby river towns that announced there would be a regatta at Keokuk on Saturday, June 12, and the prize was a silver goblet lined with gold found along the hills at Keokuk and valued at $20. The posters stated that the races were "Keokuk against the World." With such a contest facing them, Warsaw boatmen just couldn't stand by and not answer the challenge.[4] There were two classes of boats allowed in the races, rowboats and sailboats. The Keokuk river men had several boats in each class but Warsaw looked to their own expert, Andrew Wiard, to provide the craft to meet the challenge. According to the *Warsaw City Bulletin* of June 14, Wiard

entered his sailboat, *Black Swan*, and a rowboat he called the *American Eagle*. The *American Eagle* was built in thirty-two and one-half hours just prior to the race and the last nail was not driven until after the crew arrived with it in Keokuk. It is claimed that A.J. Wiard, the helmsman, had to bail water from the bottom of the boat while he steered and the other two crewmen, J.O. White and Samuel Chritchfield, handled the oars all during the race.[5] The *American Eagle* won its race against the Keokukians' *Joppa Chilian*, *Fast Maid* and *Fort Des Moines* for the grand prize, the gold-lined goblet. The *Black Swan* did not win the sailboat race since someone forgot to bring the centerboard along. In spite of this handicap, the *Black Swan* made a respectful showing and the Warsaw boats were considered the outstanding craft in the races. It is claimed that there were about 3,000 spectators watching the races from the bluffs at Keokuk, and it was not long until several more races were scheduled.[6]

With a reputation now established for building well-designed fast, small craft, the Wiards started receiving more orders for boats, including some that were larger and of greater capacity. On March 3, 1859, the following story appeared in the *Warsaw City Bulletin:*

> WARSAW BOAT YARD—Mr A J. Wiard, in connection with his father, has a schooner of 40 tons burden, on the stocks, which is about 47 feet in length It is in a forward state of completion, and will be ready to launch in the course of a couple of weeks. It is a beautiful model, and so pronounced by numerous river men who have viewed the craft The other smaller sail and rowboats that Mr Wiard has built, has given satisfaction to the parties who purchased them. As a boat builder, Mr. Wiard is gaining considerable notoriety, so much so, that his name and boats have reached New Orleans A gentleman of that city, hearing that Mr Wiard was building a model boat for the trade at and below New Orleans, writes to him that he will present the craft a suit of colors for the naming of her
>
> Next week, at the Warsaw Boat Yard, Mr Wiard commences building a steamboat for Mr Brandon, [this man's name is found spelled, Brannon, Branden, Brandon and Brandom in Warsaw and Keokuk newspapers but indications are that Brandom is the correct name] of Alexandria, Mo The boat is to be side wheel, and 60 feet in length, and finished off in packet style She is destined to be an accommodation packet for Alexandria, Warsaw, Hamilton (Illinois), Keokuk and Buena Vista (the ferry landing on the Des Moines River), running to and fro each day The intention is to place a first class engine in her, and if possible, outrun any craft that floats upon the waters of the Mississippi, in honor of the ports to which she will ply daily

On Tuesday, April 26, 1859, the completed schooner, named *L. Gagnet*, was launched before a crowd of 500 people with, as the newspaper stated, a bottle of liquid broken over the bow-sprit by Miss Jennie Hunt accompanied by loud hurrahs from the crowd. The Warsaw

newspaper stated; "The schooner is a model craft, and sets majestically on the water as a duck, and apparently not deeper in the water."[7] Keokuk's *Daily Gate City* newspaper carried a notice in its April 28 edition that a schooner of twenty-two tons burthen was launched by the Wiards on Tuesday and would make its appearance at Keokuk before sailing for delivery on the gulf. On May 17, 1859, the following story was in the *Warsaw City Bulletin:*

> The Messrs. Wiards, favored quite a number of our citizens, on yesterday, with a sail ride upon their beautiful schooner, L. Gagnet, to Keokuk and back. The Keokukians in great numbers came down to the river to admire the craft—it being the first full rigged schooner ever seen at their levee. To-day the Messrs. Wiards leave for New Orleans with her, having on board a full cargo of freight and three passengers. On the return of the Messrs. Wiards, they proceed to Des Moines City to build two steamboats of a similar model to the 'Mechanic's Bride,' the hull of which was launched from our levee last week.

The so-called "Mechanic's Bride" must have been Captain J.H. Brandom's new steamboat which he named *Eagle* when it was completed and ready to be put into service. In fact, about sixty days after the hull was launched, on July 12, the Keokuk *Daily Gate City* had the following announcement:

> THE EAGLE—Such is the name of a little steamer plying between Warsaw, Alexandria and Keokuk. Her engine was made at the Pennsylvania Foundry. We hope she will find sufficient encouragement to keep going.

The *Eagle* was a modest little vessel which a Keokuk newspaper called a miniature steamboat.[8] There is no photograph or detailed description of this boat, and all we know is that it was a sidewheel boat 70-foot long with a hull that was 12-foot wide and drew 13 inches when it sat in the water. The 12 horsepower steam engine was built at the Pennsylvania Foundry in Keokuk, and besides propelling the boat, it ran a circular saw to cut up wood to heat the boiler and produce steam. The completed boat cost $2,301.[9] The first *Eagle* appears to have been a success and regularly ran four trips daily between Keokuk, Warsaw, and Alexandria. Operations continued through 1860 and 1861 when Captain Brandom added another vessel to his little packet line.

In April of 1861, a small steamboat from Wisconsin's Fox River was tied up at the mouth of the Des Moines River undergoing some repairs. As the vessel was in distress and up for sale it afforded Captain Brandom an opportunity to obtain a larger steamboat at the very cheap price of $850.[10] This boat was the *Menominee,* which was a sidewheel vessel, that was 100 feet long with a beam of 16 feet.[11] It had a very nice little

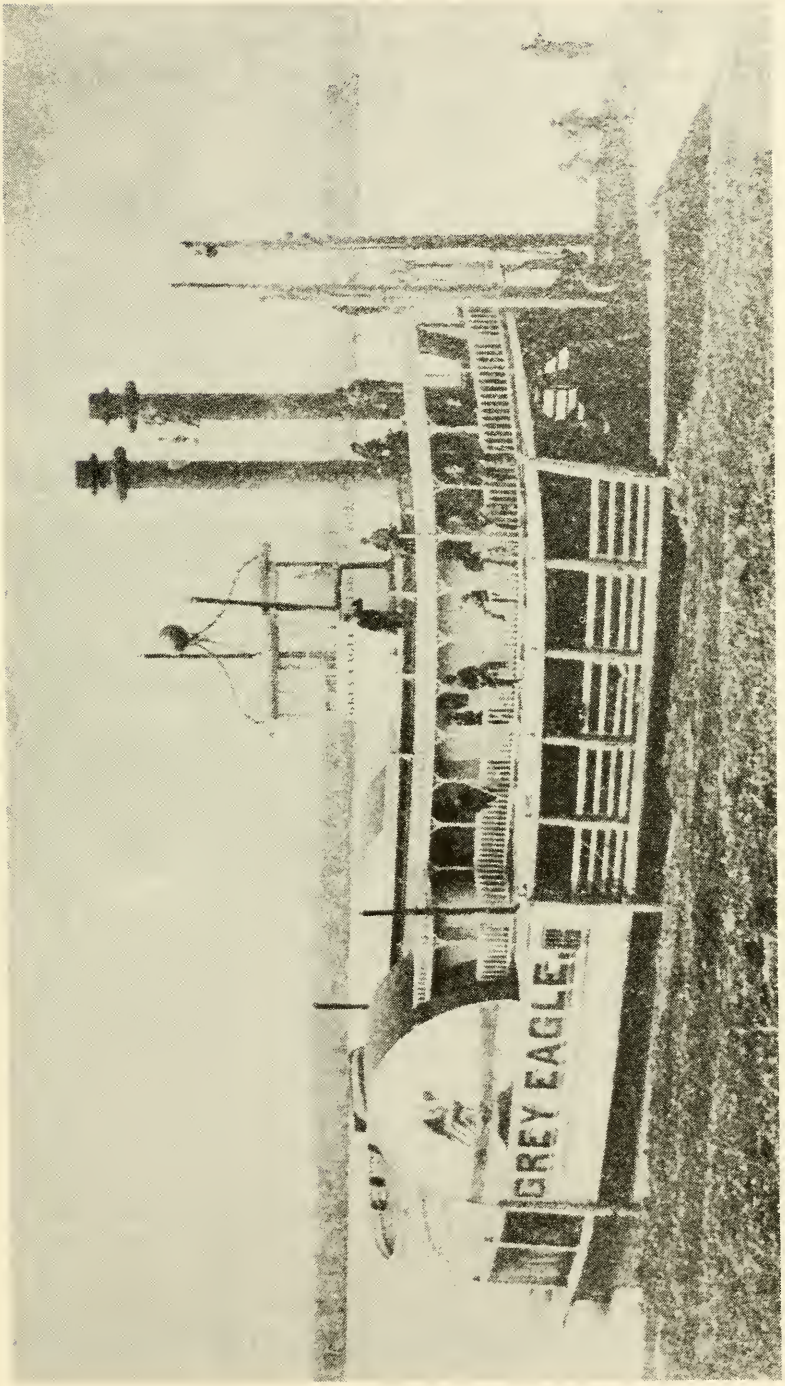
cabin to accommodate passengers on the boiler deck. The deck was above the boilers and machinery that had no boiler upon it but was so named by river men. As Abraham Lincoln was now sworn in as president of the United States, activities leading into the Civil War were accelerating and Captain Brandom apparently was going to take advantage of them. Although Brandom was a native of Virginia, he did not express publically any allegiance to either the North or the South.[12] After buying the *Menominee*, Captain Brandom cleaned up the five-year-old little boat and prepared it for service. On Thursday, June 20, 1861, the following story appeared in the *Daily Gate City:*

> The Warsaw and Keokuk packet Eagle has been superceded by the steamer Menominee, of larger dimensions in every respect, and may be called a steamboat, being more than twice the size of the Eagle and having a commodious cabin with rooms She is evidently a safe boat to travel on, and Captain Brandon [sic] deserves the cordial support of the public

It is interesting to note that Captain Brandom's *Eagle* was the first boat in a long line of steamboats named *Eagle, Young Eagle, Little Eagle, Little Eagle No. 2, Grey Eagle, Spread Eagle, War Eagle, Bald Eagle,* and *Golden Eagle*, including a few with non-eagle names, that were operated on the Illinois and Upper Mississippi rivers for almost ninety years by a company that would eventually be known as the Eagle Packet Company.[13]

Almost simultaneously with Captain Brandom placing the *Menominee* in operation, it was announced that Mr. Wiard had on the stocks the framework of another steamboat. It was to be a sidewheeler 110-foot long with a 4-foot hold and 31 feet in width and would be fitted with a social hall 75-foot in length, 8 state rooms and a ladies cabin 20-foot aft. The boat was expected to be in operation by September 1 to run between Keokuk and Quincy [14] This was Wiard's second steamboat. Even though Wiard had announced on June 27 he was building the boat, he must have started building another boat a few weeks later, or reduced the dimensions of this vessel, as the month of September went by without an announcement of a new boat in service However, on October 9, 1861, it was announced that Captain Brandom had a new boat in operation named *Young Eagle* which was a shorter boat, only 80-foot long It is possible that the 110-foot hull was left partially completed and not finished until 1862 when a boat of this size and description was placed in service by the Warsaw builders in September of that year and named *Eagle* [no. 2]

The *Young Eagle* was built jointly by Captain Brandom and young Henry Leyhe, who was not twenty-three years old The Leyhe boys, Henry and William, were born in Darmstadt, Germany, near Frankfurt, the same as their father who it is said was a bridge contractor. The family left



The *Grey Eagle*, April 6, 1866.

J. R. WILLIAMS, Pres. HENRY LEYHE, Gen. Supt. G. W. HILL, Sec'y. J. M. EAREL, Gen. Agt.

EAGLE PACKET CO.

St. Louis, Madison, Alton, Jersey, Portage DeSioux and Grafton.

Daily Packet--Champion of the Waters,

SPREAD EAGLE,

HENRY LEYHE, Master. Leaves from Wharf Boat foot of Vine, at Three o'clock p. m. S. MOREHEAD, Ed. YOUNG, Clks.

Steamers Spread Eagle, Eagle, Grey Eagle, Little Eagle, Little Eagle No. 2 and Barges. DeSmet.

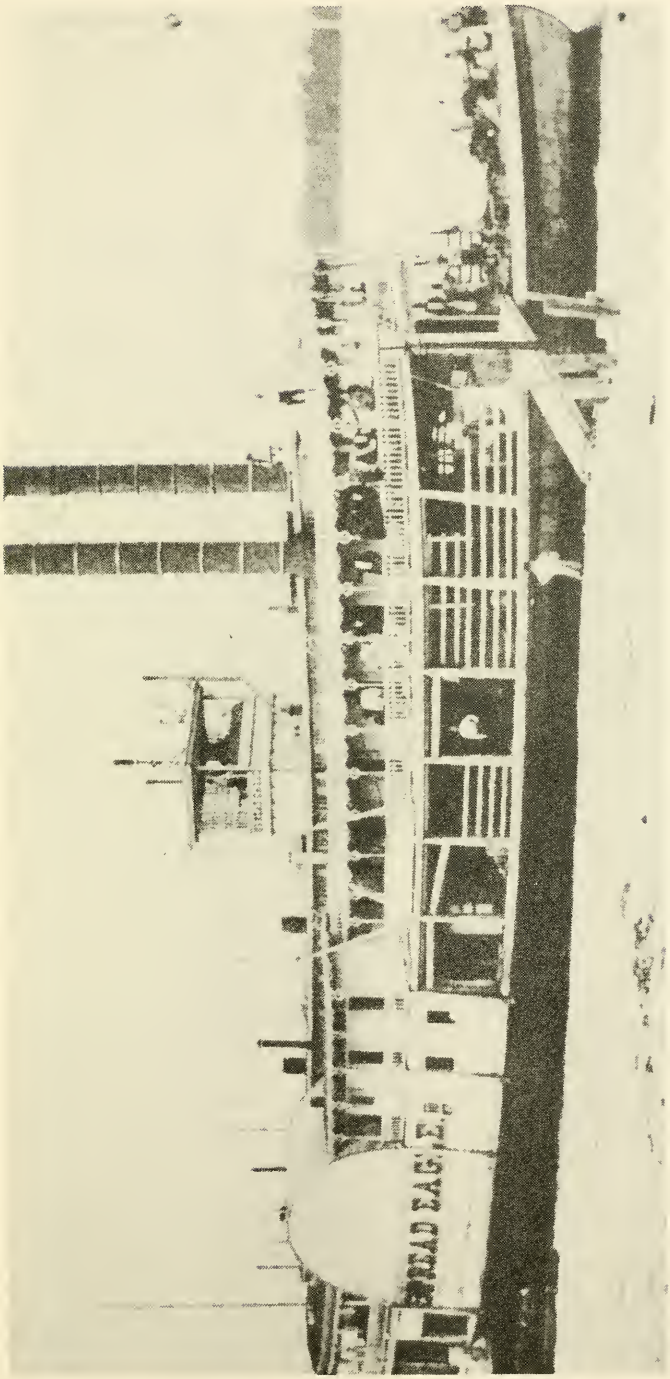
Steamer Eagle, J. R. Williams, Master, Daily Packet, between Quincy and Keokuk, landing at all intermediate points. Steamer Little Eagle and Barges, Wm. Leyhe, Master, doing general towing and jobbing business between Keokuk and St. Louis, with head quarters at Quincy. Steamer Grey Eagle, D. M. Morris, Master, Daily Packet between Peoria and Henry touching at Spring Bay, Chillicothe and Lacon on Illinois River.

J. J. Brauer, Agent, Alton, Ill. Hunter B. Jenkins, Agent,
Office: Wharf Boat, foot of Vine Street, **St. Louis.**

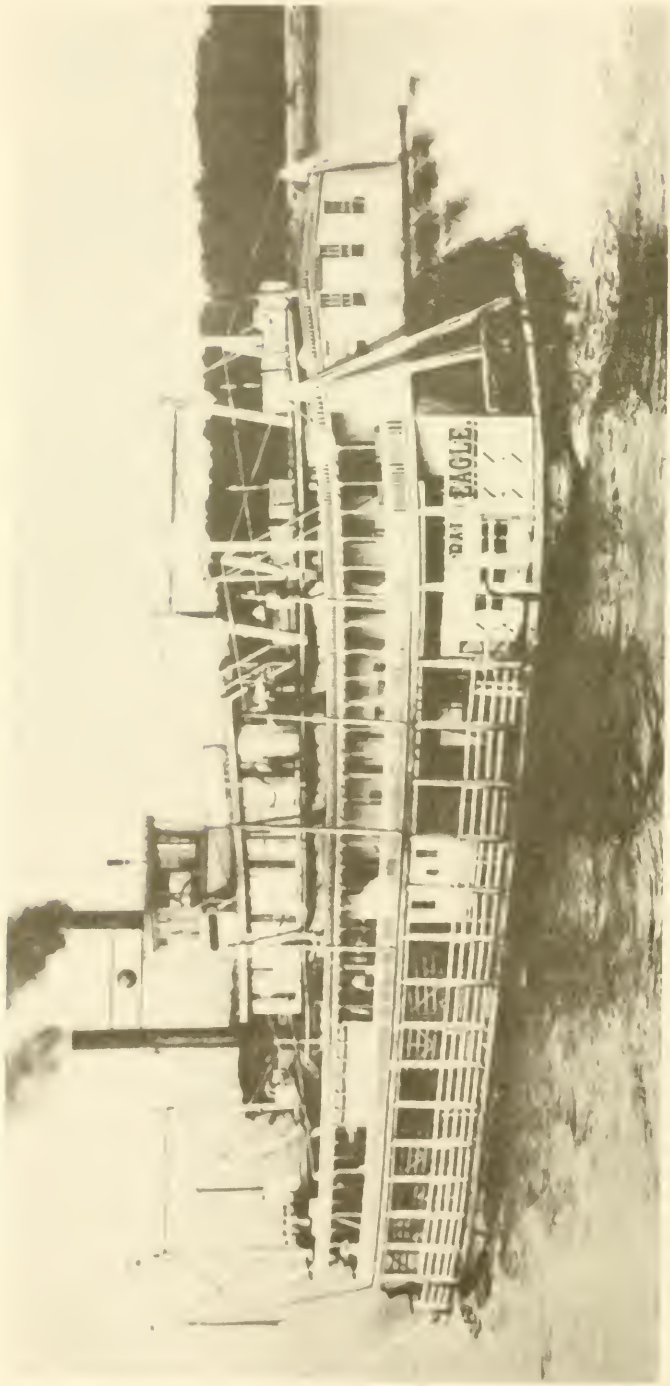
Company's Gen'l Office at Quincy, Ill.--H. Leyhe, Supt.

1876 advertisement.

Germany in 1846 and landed in New Orleans in August of that year. Like many Germans who departed their homeland at that time and came to the Mississippi Valley, they migrated first to St. Louis. Two years later, a cholera epidemic prompted the Leyhes to move to Belleville, Illinois, which they soon took a dislike to. Not long after 1850 they moved to Warsaw, which became their permanent home. The father, Henry Leyhe (Sr.), knew how to handle timber from his bridge building experience and thus had no trouble in establishing a sawmill.[15] According to an 1859 plat of Warsaw the sawmill was along the river in lower Warsaw.[16] This afforded an excellent opportunity to obtain some of the material to be sawed from rafts being floated down the river from Wisconsin and Minnesota, as well as native timber being cut nearby. There are several stories about where and how the young Leyhes obtained some of the lumber for the *Young Eagle* but there is no substantial proof as to the truth of these tales. It is said though that a pretty young girl, who would later be young Henry's wife, made the flag for the jackstaff of the *Young Eagle*[17] The new boat was a smart looking little craft that was 80-foot long with 14-foot beam and 2½-foot depth of hold. The engine had a 16-inch stroke with a cylinder and piston 8 inches in diameter. The boiler was a cylindrical locomotive boiler 10-foot long with 23-1½ inch flues made of 5/16 inch iron and was manufactured by Richard Holloway's boiler yard in Keokuk.[18] The boiler was allowed to operate at a pressure of 70 pounds per square inch. While the newspaper articles do not say so, it is probable that the machinery used in the *Young Eagle* could have been the same



The *Spread Eagle*, the first boat to be built by the Eagle Packet Company with this name, was constructed in Madison, Indiana in 1873. Photograph courtesy of the Murphy Library, University of Wisconsin, LaCrosse. At that time it was the largest vessel in the company's fleet. It was 180-foot long, 29-foot wide with a hull 5-foot in depth. The engines, 18½ inch diameter cylinders with 6-foot stroke, came from the steamboat *Pembina*, which was dismantled in Quincy in 1872. The *Spread Eagle* started its career operating between Keokuk and Quincy, but was shifted to run between St. Louis and Alton in 1874. This was the first regular operation for the company in that area which, because of its profitability, soon prompted them to move their office from Quincy to Alton. During its first year, Captain Henry Leyhe was the master and G.W. Hill was the first clerk on this boat.



The *Bald Eagle* was built at Madison, Indiana, in 1898. Photograph courtesy of the Murphy Library, University of Wisconsin, LaCrosse. It was 206½ foot long, 34-foot wide, with a hull 5½-foot deep. The machinery came off of the *D.H. Pike*, a boat previously operated by the Eagle Packet Company. The *Bald Eagle* had the longest operational life of any of the Eagle boats. It spent most of its time operating on the Illinois River and was a familiar site during the navigation season between St. Louis and Peoria. Its last service was between St. Louis and Fort Madison, Iowa, in 1929. It was the last Eagle Packet boat to make a call at the old landing in Warsaw. The company sold it in the early 1930s to a construction company for a quarterboat. It broke in two and sunk in 1934.

machinery used in the first *Eagle.* Like the first *Eagle,* this boat was a stiff-shaft sidewheel vessel, but evidently did not have a circular saw attached. The reported cost of this boat was $2,100.[19]

In 1862 the management of the Keokuk, Warsaw, and Alexandria packet operations changed hands. Henry Leyhe acquired some partners who were either young and ambitious, or older and more affluent, to join him in buying out "Ham" Brandom's interest in the *Young Eagle.*[20] It was thought that Captain Brandom would leave the trade and the business would fall into the lap of the new operators. This was not the case, however, as Brandom continued for awhile with his boat the *Menominee.* This lasted for a few months, with some heated newspaper ads, until Brandom and his boat departed for another port.[21] The new partners, beside Henry Leyhe, were his brother William (now twenty-two years old), Albert Wempner, Joseph W. Bishop (who lived in Keokuk), and G.R. Smith. With booming wartime activity, business was at a peak and consideration was given to building a larger boat.

On September 15, 1862, the *Daily Gate City* announced the arrival in Keokuk of a new sidewheel steamer named *Eagle* that was built in Warsaw to run between Keokuk and Quincy. Beside hauling freight and passengers, it was scheduled to make connections with the railroads at Quincy. The paper said this new *Eagle* was 111-foot long with a 19-foot beam, and the saloon (cabin) was 60-foot long with twenty-four berths. The engine had a cylinder 15½ inches in diameter with a piston having a 4-foot stroke. It had one boiler 14-foot long and 46 inches in diameter with 55 flues. The paddlewheels on each side of the boat were 15 feet in diameter. It is thought that she was a swift boat. The government enroll ment records pretty well agree with the dimensions given in the newspaper except for the length of the hull which was 102½-foot long with a 3-foot depth. It was registered at 53 39/100 tons.[22] Captain J.W. Bishop became the boat's master which was a popular craft in this area for a number of years.[23]

In 1863, the partners apparently decided the *Young Eagle* was not a large enough boat and it was sold on February 12 to W.H. Pierce, James Conite, and Ed. Campbell of Rock Island.[24] This left the partners with only one boat, the *Eagle*, which was withdrawn from the Quincy trade and placed back in the old circuit between Keokuk, Warsaw, and Alexandria. With the loss of Brandom, the partners needed someone with additional river expertise and financial backing. In Alexandria, on the Missouri side of the Mississippi River, were two brothers (also Virginians) by the name of Hill who had established themselves as good businessmen with an interest in river operations.

G.W. Hill, or Granderson Winfrey Hill, had an extensive business in Alexandria and operated the little boat *Des Moines Belle*, later renamed *Col. Morgan*, up and down the Des Moines River.[25] Besides G.W., there was a brother named Robert E. Hill who farmed an extensive acreage

near Alexandria and also had some knowledge of river operations. It is claimed that the Hill brothers had a pork-packing plant in Alexandria that they operated in the winter when the river was frozen over and that they employed the Leyhe brothers in the plant as engineers.[26] This combination was a fortunate arrangement in 1863 when another boat and additional capital was needed. The Hill brothers were invited and joined the partnership.

In the same year it was decided to build a boat that would be longer and have a sternwheel. The Warsaw boat yard was busy that summer constructing a 128-foot long hull that was 22-foot wide with a 4-foot depth. This sternwheel boat would be used only for towing or as a freight boat and not carry passengers. It was placed in service in midSeptember and named the *R.E. Hill.* G.W. Hill and the Leyhes had a half interest in the boat and G.W. Hill became the craft's master.[27] G.W. Hill, from this initial investment, established a relationship with the Leyhes that extended over many years. At the end of 1863, the country was about at the mid-point in the Civil War and there was less river transportation available for civilian use. The partners, who were sometimes called the Eagle Company, looked forward to the navigation season in 1864.

On June 4, 1864, Captain Bishop announced that a new boat, now on the ways at Warsaw, would be launched in about three weeks. The new boat would be the largest boat to be built in Warsaw and cost $21,000.[28] It would be another sternwheel boat that was 156-foot long, 28½-foot wide with a 4-foot depth of hull. There was no mention made about the Wiards still being associated with the boat yard and it is presumed that the boat-building, photography, and dentist family had left Warsaw. Research has not revealed any extensive biographical information about the Wiards and their eventual destination upon leaving Warsaw. The new sternwheeler was named *Amaranth* when it was enrolled and placed into operation on August 31, 1864.[29] Again, this new vessel was used only as a towboat and carried no passengers. Robert E. Hill, one of the partner owners, was the master of the boat.

Indications are that the boat went right to work and was operated successfully. However, the *Warsaw Public Record* newspaper on August 5, 1865, stated, "The Amaranth, launched from the Warsaw wharf about a year ago, and which has been lying there some weeks undergoing repairs, will again steam up in a few days. She is about 300 tons burthen the property of the Eagle Packet Company, and will be operated either from St. Louis to Rock Island or on the Illinois River. G.W. Hill is expected to resume command." This is the first time the newspapers referred to the loosely knit organization as the Eagle Packet Company. From this story it indicates that Robert Hill did not remain very long in the steamboat business like his brother G.W., and soon returned to his Alexandria farm.

The year 1865 saw the tragic Civil War end and the even more tragic assassination of President Lincoln which brought closer to home the great

loss suffered by the country in this terrible conflict. The Eagle Packet Company or the Eagle Company (sometimes it was called the Eagle Ferry Company) was now unhampered by any wartime restrictions that might, by design or otherwise, have been imposed upon it. The company was also subject to more competition.

Sometime in the late spring or early summer of 1865, the Warsaw boat yard had another vessel upon its ways. A new steamboat was soon to slide into the water from the Warsaw riverfront. The editor of Keokuk's *Daily Gate City* published the following story on November 3, 1865:

> THE GREY EAGLE—This handsome bird of passage we visited yesterday. Having a lively fancy, reader, imagine said bird to be not a bird at all, but the fine new packet it is, and having the most admirable master and proprietor in the person of our friend Captain Bishop. The boat is 135 feet long, 40 feet beam and 4½ foot hold. The boilers and entire machinery are new, and cannot be surpassed. Much of the casting was done at the foundry of Vail, Armitage & Co., in this place, and is strong and excellent. The boat was constructed by Messrs. William and Henry Leyhe, of Warsaw, and is highly creditable to their skill and workmanship. It is throughout a well constructed craft, and is a good addition to the river line.
>
> The old *Eagle* makes her regular trips as heretofore.
>
> The *Grey Eagle* leaves Quincy daily at 8 o'clock A.M., and Keokuk daily at 2 P.M., waiting, however, for the arrival of the Western train.

This little steamboat was said to cost $20,500.00 and was the last steamboat to be built in Warsaw. The line, which was now calling itself the Eagle Packet Company, had enough business between Quincy and Keokuk to keep its four boats busy hauling passengers and freight or towing rafts and barges.[30]

One must give credit to the Leyhe brothers for being the engineers and solid businessmen of the company. The oldest brother, Henry, was in a few years to acquire the title "Commodore" which he carried for the rest of his life. At this point the partners began broadening their sights. John Reid Williams, the former operator of the ferryboat *J.R. Williams* between Warsaw and Alexandria, became the next partner in the company and apparently joined after R.E. Hill withdrew from the business. The group now consisted of the four men who would provide the money and executive ability to make a success of the packet business; J.R. Williams, Henry and William Leyhe, and G.W. Hill.[31]

Post-war business was good and the Eagle Packet Company was making money. In 1868, the old faithful *Eagle* was wrecked at Quincy and a new craft was ordered that was almost an exact duplicate from a boat yard in Madison, Indiana, on the Ohio River. At the same time, the company built a new small freight and towboat at Madison that was named *Little Eagle*. These were the first boats to be built outside Warsaw

for the company. The *Little Eagle* was 130-foot long with a 22-foot beam and could carry 100 tons. It cost $11,500.[32]

As Quincy, Illinois, was becoming more of a center for manufacturing and its population was increasing, Henry Leyhe moved there in 1869 to look after the company's growing interest.[33] In June of 1873 the partners filed for incorporation at Quincy as the Eagle Packet Company. Their charter was granted and took effect on July 4 of that year. The company was incorporated for $65,000.00 and most of the stock was divided equally between the four principals; J.R. Williams, Henry and William Leyhe, and G.W Hill.[34] In later years, members of the Leyhe family bought all of the company's stock and became the sole proprietors. While the company continued to do business in the Warsaw and Keokuk area for a number of years, the center of their operations moved on down the Mississippi from Quincy to Alton and finally to St. Louis. It is said that the early owners of the Eagle Packet Company always looked back with fondness to the days when they built boats at Warsaw and ran them between Keokuk, Warsaw, Alexandria, Quincy, Canton, and La Grange.

NOTES

[1] *Warsaw City Bulletin*, 13 November 1856.

[2] U S Census for Hancock County, Illinois, 1860, Town of Warsaw, Second Ward, p. 899.

[3] Warsaw Plat in *Map of Hancock County-Illinois* (Chicago: Holmes and Arnold, Civil Engineers and Map Publishers, 1859)

[4] *Warsaw City Bulletin*, 14 June 1858

[5] Ibid

[6] Ibid

[7] *Warsaw City Bulletin*, 27 April 1859

[8] *Daily Gate City* (Keokuk), 17 April 1860

[9] "The Eagle Packet Co ," *The Herald* (Quincy), 30 March 1870

[10] *Des Moines Valley Whig* (Keokuk), 29 April 1861

[11] Robert E Gard and Elaine Reetz, *The Trail of the Serpent* (Madison Wisconsin House Ltd , 1973), p 122

[12] U S Census for Clark County, Missouri, 1860, Vernon Township

[13] "The Eagle Packet Co ," *The Herald*, 30 March 1870

[14] *Warsaw City Bulletin*, 27 June 1861

[15] "Worthen Scrapbook," Hancock County Historical Socity, pp 358-59

[16] Warsaw Plat in *Map of Hancock County-Illinois*, 1859.

[18]U.S. Steamboat Inspectors records for Galena and Dubuque, Dubuque County Historical Society, Book No. 3, entry for 28 June 1865.

[19]"The Eagle Packet Co.," *The Herald*, 30 March 1870.

[20]Roy L. Barkhau, *A History of the Eagle Packet Company* (Cincinnati: Young and Klein, Inc., 1951), p. 11.

[21]*Daily Gate City,* 31 March 1862.

[22]Certificates of enrollment issued at Keokuk, Iowa, 1859-75; Records of the Bureau of Marine Inspection and Navigation, microfilm Record Group 41, National Archives, Washington, D.C. A microfilm is in the Keokuk Public Library.

[23]Advertisement in the *Daily Gate City,* 9 March 1863.

[24]Certificates of enrollment issued at Keokuk, Iowa, 1859-75.

[25]*Annals of Iowa,* 3d ser., 4, no. 5 (1900), 329-30.

[26]Barkhau, p. 15.

[27]Certificates of enrollment issued at Keokuk, Iowa, 1859-75.

[28]"The Eagle Packet Co.," *The Herald,* 30 March 1870.

[29]Certificates of enrollment issued at Keokuk, Iowa, 1859-75.

[30]"The Eagle Packet Co.," *The Herald,* 30 March 1870.

[31]Ibid.

[32]Ibid.

[33]*Root's City Directory,* Quincy, Illinois, 1869-70, p. 157.

[34]"Articles of Incorporation of the Eagle Packet Company," filed with the Recorder of Deeds at the Adams County Courthouse, Quincy, Illinois on 12 July 1873.

THE WAY IT USED TO BE: FOLKLORE OF THE RIVER MEN

Philibert Hoebing and John Schleppenbach

Anyone interested in contemporary folklore from the Upper Mississippi River area will almost certainly be led to examine collections of material twenty or thirty years old. That material will represent a rather restricted sampling of the types of oral tradition which can qualify as folklore and will, in fact, represent an even earlier era than the time of publication indicates. Consequently, original efforts at collecting material by river men from river towns is frustrating, since few practical guidelines for this effort are available. A few examples may clarify the problem which faces someone attempting to gather and assess folklore of this type.

One text which deals with this material is B.A. Botkins's *A Treasury of Mississippi River Folklore.*[1] The book, published in 1955, incorporates the collected materials available in libraries, historical societies, and university archives. These include "stories, ballads, traditions and folkways of the mid-American river country," most of which are taken from accounts in collections of state organizations bordering on the river. Few are collected from original sources since the author spent only a month on location in field-work. As a result, Botkin's approach, which Richard Dorson described as "scissors and paste,"[2] has a literary character not always appropriate to his subject, and the selections are not always authentic or reliable. One has to look to archive sources for authentic narratives of the type which are actually recorded by collectors, and familiarity with actual informants, to get a sense of context, is essential. Despite these limitations, Botkin's work serves as a convenient source of collected materials from the tradition of the river men.

Original collections of folklore from areas along the river offer an avenue of comparison for future collectors, but cover little of the lore of river men. Vance Randolph's collections of tales, for example, occasionally treat some of the concerns of the river men—hunting and fishing stories, in particular—but not in relation to river towns or river men specifically. The manner and method of collection, and the authentic character of the material, deserve emulation in attempts to collect and record regional folklore like that of the river men.

Another collection of great value regarding method is Harry Hyatt's

Folklore of Adams County, Illinois.[3] This collection, based entirely on recorded oral interviews with informants in and around Quincy, Illinois, offers sayings and folklore on a wide variety of topics: weather, luck, cures, wishes, social relations, birth, marriage, death, and the spirit world. The entries are numbered in such a way that the text may serve as a reference manual for folklore collectors. From the point of view of river lore, however, the collection has little application, since hunting and fishing stories are not included. Our material, which consists mainly of hunting and fishing stories from the Quincy Bay area of the Mississippi, represents a new set of topics to complement the Hyatt collection. It is our intention to catalogue the material we have collected from river men after the manner established in Hyatt's widely used text,[4] and to make the collection available in published form in the near future.

The traditional folklore of river men in river towns has not gained attention from collectors for a number of reasons: the material is not tale-typed easily, the contexts for river lore are not homogeneous but shifting, river men are not always hospitable to outsiders, and the material of storytellers frequently involves personal narrative rather than formal tale types. The river men themselves are usually an easy-going group, as Botkin notes, and "for this sort of existence, the drifting, floating life of the river was admirably suited, from the days of the raftsmen and flatboatmen, with their floating homes, shops, and 'towns' to the latter-day shanty boat people, river rats and swamp angels."[5] The common character or river men in recent years, except for proximity to river towns and an interest in hunting and fishing, has few of the features of the earlier time described by Botkin, but the river towns where these storytellers grew up and shared experiences and lore have had a special influence on them. Botkin comments, "as for St. Louis, Quincy, Davenport, Moline, Rock Island, Dubuque, LaCrosse, Winona—what are they? Not towns—river towns. And what a difference that makes."[6]

River men have traditionally been seen as tall-tale tellers, specialists in hunting and fishing stories which stretch the truth in the way of an old saying: "every time a river man tells the truth one of his ears falls off. You never see a river man with less than two ears, did you?"[7] The lore of the river men, as seen in our own interviews with river men from the Quincy area, shows a mixture of personal narrative, folktale, and oral history. The reader should consider distinctions among these terms as they have been used in the modern discipline of folklore in order to understand the problems of classifying and comprehending the material we have collected.

One reason the lore of the river men has been overlooked by folklorists is that the material does not fit traditional classifications or "tale types" used by collectors in the past. The method called "Finnish-geographical," or the Aarne-Thompson approach to collection, required that folktales follow already identified structural forms. Segments of folktales, called

"motifs," could be found as overlapping elements in a variety of tale types, but personal experience narratives and oral history were automatically excluded from consideration by the collector. In more recent years, folklore has become a somewhat eclectic discipline. The research methods adopted from linguistics, anthropology, and the social sciences have made professional folklorists more conscious of the importance of context (the conditions of the informant) and function (the purpose of the recitation). This has meant even more careful discrimination on the part of the collector as to exactly what constitutes folklore.

The difficulties of such discrimination have been recognized by Richard Dorson, notably in *American Folklore and the Historian* (1971). His essay on "Local History and Folklore" illustrates the way in which personal narrative can take form from local historical events.[8] Many scholars have consequently discussed the problem of form—Alan Dundes in "Metafolklore and Oral Literary Criticism,"[9] Dan Ben-Amos in "Toward a Definition of Folklore in Context,"[10] and many others—and analysis of narrative types or "form" has become an important issue in folklore theory and criticism. In a recent issue of the *Journal of American Folklore*, for example, John Robinson's article "Personal Narratives Reconsidered"[11] offers a detailed treatment of research on narrative structure.

Robinson observes that the reporting of experience in everyday conversation was neglected by students of language until the publication of research by Labov and Waletzky. These researchers found that personal narratives have two functions: the referential function of describing the action and the evaluative function of "making the point."[12] Stories are distinguished from reports to the extent that they make the point, though, as Polanyi argues, the point must offer culturally salient material agreed upon by members of the narrator's culture.[13] This may include recounted stories, as Goffman contends, and, as Robinson points out in some detail "the contribution of participants other than the narrator must be considered."[14] The role of the listener, as Robert Georges contends, is complex rather than merely passive.[15] Folklorists concern themselves, therefore, with form (narrative structure), function ("the point"), and context (the varied roles of listeners).

The roles of listeners often influence the course of the narrative in the material we have collected. Folklorists have developed categories known as "modes of conversation" to analyze interactive patterns in the story-telling event. Conversation modes may be associational (casual conversation), problem-solving (goal-oriented interactions), interrogative, or clarification-of-misunderstanding modes. Further, James Britton identifies spectator and participant modes,[16] while Watson and Poller find four kinds of "sociable interaction": presenting, sharing, matching, and polarization.[17] Robinson summarizes these approaches by establishing

tables to identify conversation and narrative modes by specific features.[18] He concludes that the way in which episodes are accommodated to varying narrative situations is a matter for further investigation.

For professional folklorists, identification or narrative structures takes precedence over analysis of modes since the narrative being examined must first be formally isolated from the tape recorded interviews in which it is embedded and from which it is transcribed. The analyses of narrative structure provided by Labov and van Dijk are useful in handling recorded material. Labov identifies six components of a fully developed narrative: abstract (a summary), orientation (to time and place), complicating action, evaluation (appraisal from the narrator's point of view), resolution, and coda (signal that the listener may again speak). Less developed (complete) and minimal narratives do not have all of these features.[19] T. van Dijk finds, in his analysis, three obligatory components of narrative: exposition (Labov's "orientation"), complication, and resolution.[20]

These terms and their applications to recorded material may most usefully be seen when considering a recorded account which includes narrative intrusions by audience and interviewer as well as by the narrator himself. The listeners, who have heard the story before, attempt to clarify issues in the narrator's recollection while the narrator himself departs from and returns to the narrative in response to his own view of storytelling priorities and the interests of his listeners

One of the recorded accounts of a narrative situation shared by the river men around Quincy, Illinois, is a remembrance of hunting and fishing at Lima Lake. The informant in this case is asked by the interviewer to tell about Lima Lake, and the narrator begins to frame a narrative about duck hunting. Of the many kinds of points to be made about episodes on the lake, the speaker begins with an orientation regarding events there:

> This all happened back in 1927, and we used to go to Lima and we'd take a boat up the ditch about three miles and come to four corners where most of the ducks congregated. Then we'd go about another mile and we found a high spot to pitch our camp. We'd generally take about two boatloads, would be three or four bales of straw and we'd drive stakes for a bed (we had canvas there and we'd put that straw on the floor and in the bed). Then we'd go out in the field there (it was all marshy like) and cut a patch maybe two hundred feet square where it'd be clear water and the next morning (we'd have our decoys out) we'd be all set. But evening when we'd go to bed we'd generally have our gasoline lanterns lit because there was a lot of snakes up there. Every now and then we'd be sleeping a snake would crawl in bed with ya. Ya had to kick them out.

[Here there is a question and brief digression]

Quincy Bay, July, 1969. Photograph courtesy of Fr. Tom Brown, OFM, Quincy College.

Quincy Bay, May 1978. Photograph courtesy of Fr. Tom Brown, OFM, Quincy College.

> Then we'd get up real early in the morning and we'd go out and get lined up for daylight shooting. Back in those days there was no law, so you generally take two automatics with five shots in and boy when them ducks would come in they'd just come in by the thousands and when we'd open up the ducks would be falling everywhere. You had to kind of bat 'em out of your face when they'd start falling 'cause they'd be falling on you. You'd maybe be three guys in the blind shooting at one time and the ducks would just be in the thousands.

[There is a question and a digression about the number of people hunting and dangers of close quarters, weekend hunters.]

> Back in those days it was all model T's and a lot of guys they could get back in there a pretty good ways with a team and wagon and I saw the ducks in their wagonloads, just hauled out by the wagonloads, and maybe have the double sideboards and must maybe 8 or 10 guys hunting back in there and they'd just slaughter them big redlegs. Boy, I never seen anything like it in my life.

[A question about numbers taken and digression about hauling them through mud. Another question about live decoys and a lengthy digression—actually a separate narrative—about them. There is a long internal narrative, an authorial intrusion, about hunting on the Illinois River.]

> When we opened up there was ducks laying everywhere. And right back in there they was again and we cut loose a couple times and we couldn't hardly walk. We got on out of there. That's the way it used to be years ago.

[Questions about hunting and the pits, use of blinds, and first rights, and digressions and finally a question about where Lima Lake has gone.]

> Well there was several different guys tried to drain it but they never had much luck. Now there was a nice guy out of Chicago who said he'd drain it and he did drain it and that's when the bass fishing come in. We used to do a lot of bass and crappie fishing up there and one particular time.

[At this point, a new narrative about fishing begins.]

The features of this personal narrative, taken by the listeners as a storytelling episode on the subject of Lima Lake, are consistent with the obligatory structural features of complete narrative suggested by Labov and van Dijk. There is certainly an orientation, complication, and resolution in this material, and the narrator's own intrusions indicate some effort at evaluation. The evaluation or "point" of many of these narratives has to do with the differences between the present and "the way it used to be years ago." An abstract and coda may not appear because the narrative is clearly episodic. Also, the interviewer and listeners, familiar with the story cycle, are active in bringing in emphasis and clarification of

material in the story. So, from the standpoint of modes, it can be argued that Georges four points are all included, as are the four points presented by Watson and Poller. An examination of a few additional narratives will make such an analysis more practical, however.

There are many intertwined themes in the narrative material collected from this informant, and he consequently has to feel the interests of his listeners in order to choose which materials to emphasize: the tremendous numbers of ducks or fish garnered in the old days, the unfairness of restrictive hunting laws and fines, the greenness and dangers of weekend hunters, odd and unusual events which include both personal and local history. An example of personal history follows, with the evaluation point that the fines were unfair and could be flouted.

> It was long about in '28, there was an old guy with about 10-15 cats around his house. He'd always go out at night and holler to them cats, call just like a cat. We was out there one time hunting ducks and he come out there with his little boat and he says "now you come up to the house and pay a fine because you're shooting ducks in the spring of the year." So H. says "You never seen no ducks! Come over here by the boat!" He pulled over by the boat and H. grabbed him and stuck him under the water, held him a little bit and pulled him up again, and says "you see any ducks?" He says, "Yeh, I do. I see more than ever now." And H. put him down again. I says "H., you're gonna drown him." H. says, "I ain't gonna drown him. I'm just gonna get him to where he can't see those ducks." He pulled him back up. The old man says, "I never seen no ducks in my life. I never seen you neither." H. says, "I'll give him another drink." Pushes him down again. By that time he was blue in the face. I said, "H., let's get outa here. You're gonna get in trouble with that guy. You're gonna drown him."

This episode seems more self-contained than the Lima Lake narratives, and illustrates some features of folktales which could allow for wide transmission. There is an orientation, which details the setting, but is is clear that the narrator is aware of another story or anecdote when he begins describing the "old guy" with the cats. This part of the narrative may have had to be dropped in order to make a point, since the listeners were primarily interested in material about hunting and fishing. In order to describe the impact of fines and make light of it, the narrator dispensed with material not directly germane to that issue. A clear pattern emerges when the dunking begins, the narrator using the technique of tripling. Ordinarily, the tripling would build from denials until the antagonist came to agree. In this case the narrator adds emphasis by making the third dunking a gratuitous "for good measure."

The resolution is followed by a brief coda which contains further evaluation: the storyteller has good sense, and serves as a moderating influence on the protagonist. It is no accident that the story is told from third person in this case, but it is also not surprising that that narrator

enters events as a third person, verisimilitude being necessary to the context and audience. This story may have plenty of analogues in folk tradition, though we have not seen parallels in motif and tale collections to quite match the events.

There have been many accounts of the Armistice Day blizzard of 1940 which is described in the following account. This is local history first and may become legend or folklore in particular versions. It is clear from the brevity of this account, and in turn from the numerous unanswered questions of the listeners and interviewer, that the narrator sees this more as history than as lore and, under conditions of tape recording, feels unsure about developing this narrative fully. In this case, the investigator is inclined to clarify the material as minimal narrative or report:

> On Armistice Day it caught all those guys out there. They went out in shirt sleeves. I didn't go that time I don't know why. I had something. But those guys all went out there on them islands and on them sandbars and the river came up and the storm and they froze to death. They couldn't get off [Question asked] There was quite a few. The water came up and storm came up fast. [Question asked] It happened one Armistice Day [Question asked] I didn't go out. You didn't have no storm warnings

A more detailed version of this story is contained in Captain Frank J. Fugina's book *Lore and Lure of the Upper Mississippi River* (1945):

> This storm in which so many hunters lost their lives, may be loosely related to the supply of ducks since the establishment of the nine-foot channel, but I cannot refrain from mentioning it It was one of the worst storms ever witnessed in the Upper Mississippi valley The storm swept literally from coast to coast, following the river for five hundred miles. From fifty-four degrees at noon the temperature dropped in twelve hours to eight degrees above zero By four in the afternoon the wind had attained a velocity of fifty miles an hour and was accompanied by a blinding snowstorm Many duck hunters, lightly clad, enticed out by the mild weather, were wholly unprepared to fight the elements at their worst on land and water Ironically enough, thousands of ducks driven by the storm settled on the bottoms for protection, but that availed nothing because of the severity of the storm which had put an end to hunting [1]

A comparison of these versions reveals a number of interesting factors about the relationship between history and folklore, and this relationship is certainly strained by the narratives presented in the storytelling activities of river men Both accounts deal with an event of great importance, a local calamity, and both narrators are interested in the relation of this event to duck hunters. Captain Fugina, however, includes the account as a reported narrative unnecessary to his overall purpose as a writer, and makes an effort to provide details as reportage requires. The informant in

the first case, on the other hand, has as a purpose the presentation of typical and inviting stories to an audience of listeners. Because the material is being recorded, the narrator is more than usually concerned with facts and authenticity, including personal and local history where pertinent. It is clearly an uncomfortable relationship, in this case, between storyteller and material, with context and audience having more than the usual influence. But this is, after all, merely a storytelling episode within the framework of a series of hunting and fishing tales beginning with the Lima Lake account.

The problem a collector faces is always to determine what kind of material he is dealing with. The amateur will accept any vagrant ruminations as matters of record, while the professional folklorist (or oral historian or archivist) will attempt to discriminate folklore from personal narrative and oral history. There is good reason, for example, to exclude the account concerning live decoys from the Lima Lake narrative:

> *Interviewer:* Did you use live decoys?
> *Informant:* We'd train 'em decoys all summer long, flyers, and we had a string on their leg with a cork. We had 'em trained so when we'd see a bunch of ducks we'd shoot that duck up in the air and he'd fly around, see, and start calling and come right down in the course and we had feed in the blind all the time where this duck 'ld come right in the blind and sit there and feed and when the other ducks come in we'd throw them up, maybe had 2 or 3 in the box, and we'd throw them ducks up and he had that little string and cork on 'em and see we know'd all the time which duck it was 'cause we had him trained to come right in there. Take quite a little training to train that duck.
> *Interviewer:* You had those ducks there?
> *Informant:* Most of the guys did. I forget just what the name of 'em was called, was a mallard, an English call duck, they really called. The minute we see the bunch of ducks coming we just held 'em up there they started calling. Boy, they could really call, and when they got anywhere near, we'd shoot that duck up like that, see, and then wait for them and they'd all come up right in front of you. We'd just line 'em up, boy, and cut loose, see. By the time we got out of there we could unload 2 automatics because there'd be so many ducks, see. They'd just be in and they'd be right back in again. They'd see that duck flying around in the air.

This account should be categorized separately, and is really an unintended digression for the narrator. When new material about live decoys is collected, however, this account will serve as a prime example of personal narrative on that subject. The abstract, orientation, evaluation, and coda for this episode will have to be supplied by the collector. A careful reader may be wondering how the Lima Lake narrative is concluded, how the coda allows the listeners and interviewer to return. The fact is, the Lima Lake material is the focal point of a thirty-minute

narrative, and the point of the entire account, as seen by the narrator is as follows:

> All we had was live decoys. The big shots had these retrievers. I had one—it was in later years—every time I'd shoot something he'd go get it But he was bad around another dog—if another dog got in the water he'd go fight him right away. But he was a real retriever; he'd get anything you shot. I don't care if you'd shoot a tin can, he'd go get it. That all happened in later years. This other was all back there in '27 or '28, the way it used to be.

One conclusion that this examination of the folklore of the river men makes evident is that the narratives of these folk are worth collecting, despite the disparate nature of their presentation. There is a wealth of lore available in their material, and it is our intent to properly catalogue and publish it. Another obvious result of this collecting activity is the recognition that tale-typing of folklore from regions like the river towns is an extremely difficult procedure, one that involves an awareness of many types of discourse as well as oral history. Consequently, collecting and organizing of entries has become an activity involving a certain amount of philosophical and literary criticism. How can we tell fiction from fact? How does the context of the tale-teller influence the storytelling activity? How does the tradition of river life enter into the lore of river men? These questions are worth pursuing in the general context of folklore research as well as in the particular activity of collecting folklore of river men.

NOTES

[1]B A Botkin, *A Treasury of Mississippi River Folklore* (New York: Crown Publishing, 1955)

[2]Richard M Dorson, *American Folklore and the Historian* (Chicago: University of Chicago Press, 1971), p 5

[3]Harry M Hyatt, *Folklore of Adams County, Illinois* (Hannibal, Missouri: Western Printing, 1965)

[4]Hyatt used simple consecutive numbering, the last entry being 6,537 in the 1965 edition of *FACI* Since our collection is outside the catalogue generally, our numbering begins at 20,000

[5]Botkin, p xx

[6]Botkin, p 7

[7]Botkin, p 34

[8]Dorson, pp 150-56

[9]Alan Dundes, "Metafolklore and Oral Literary Criticism," *The Monist* 50, no. 4 (1966).

[10]Dan Ben-Amos, "Towards a Definition of Folklore in Context," *Journal of American Folklore* 84 (1971), 3-15.

[11]John A. Robinson, "Personal Narratives Reconsidered," *Journal of American Folklore* 94 (1981), 58-84.

[12]William Labov and Joshua Waletzky, "Narrative Analysis: Oral Versions of Personal Experience," in *Essays on the Visual and Verbal Arts,* ed. June Helm (Seattle: University of Washington Press, 1967), pp. 12-44.

[13]Livia Polonyi, "So What's the Point?" *Semiotica* 25 (1979), 207-41.

[14]Robinson, p. 70.

[15]Robert A. Georges, "Toward an Understanding of Storytelling Events," *Journal of American Folklore* 82 (1969), 313-28.

[16]James Britton, *Language and Learning* (London: Allen Lane, 1970).

[17]Joanne Watson and Robert J. Potter, "An Analytic Unit for the Study of Interaction," *Human Relations* 15 (1962), 245-63.

[18]Robinson, p. 83.

[19]William Labov, "The Transformation of Experience in Narrative Syntax," in *Language of the Inner City* (Philadelphia: University of Pennsylvania Press, 1972), p. 363.

[20]T.A. van Dijk, "Action, Action Description, and Narrative," *New Literary History* 6 (1975), 290.

[21]Captain Frank J. Fugina, *Lore and Lure of the Upper Mississippi River* (Winona, Minn.: Jones and Kroeger Co., 1945), pp. 203-04.

THE NIGHT OF THE PRAIRIE BELLE

James V. Swift

An unusual number of famous writers have come out of western Illinois. Edgar Lee Masters, Carl Sandburg, and Vachel Lindsay are the most well known. Then there is John Hay. Perhaps better known today as a diplomat and politician, John Hay also coauthored one of the great biographies of Abraham Lincoln. He also wrote *Pike County Ballads* which includes one of the most famous of poems on the steamboat era.

John Hay had been brought to Warsaw, Illinois, as a boy, and in his formative years there gained a love for the Mississippi River. In an address made on May 19, 1904, at the opening of the Press Parliament of the World at the Louisiana Purchase Exposition in St. Louis, he recalled that:

> the boys of my day led an amphibian life in and near its waters in the summertime, and in the winter its dazzling ice bridge, of incomparable beauty and purity, was our favorite playground; while our imaginations were busy with the glamour and charm of distant cities of the South, with their alluring French names and their legends of stirring adventure and pictures of perpetual summer It was a land of faery alien to us in all but a sense of common ownership and patriotic pride. We built our forts and called them the Alamo; we sang crude songs of the cane and cornfield and the happiest days of the year to us who dwelt on the northern bluff of the river were those that brought us, in the loud puffing and whistling steamers of the olden times, to the mecca of our rural fancies, the bright and busy metropolis of St Louis.[1]

Young John Hay was later to go to a private school in Pittsfield, county seat of Pike County, and his impressions, gained there and in Warsaw, were the source of *Pike County Ballads*.

Some historians may wonder what the basis was for the famous river poem from the Ballads, "Jim Bludso (of the Prairie Bell)." In 1963, Dr. Carl Robert Bogardus, Sr., of Austin, Indiana, published a thin booklet with this poem in it, nicely illustrated with line drawings from the steamboat era. Dr Bogardus included some notes in which he said that Mark Twain had written John Hay after the publication of the poem in the December, 1870, issue of the *New York Weekly Tribune* taking the author to task. Clemens said the poem should have been dedicated to the pilot of the boat, not the engineer, for it was only the pilot who could have

done what Jim Bludso is credited with doing. Hay answered to say that the incident was based on fact, and that he had heard the story from Henry W. Fairchild, a schoolmate in Warsaw. Oliver Fairchild, the boy's father, had died on the steamer *Fashion* in just such a manner. It was Henry Fairchild's story that led to the poem.

As to the boat mentioned in the poem, there is no record of a *Prairie Belle* in standard boats lists, but there was a *Movastar,* and she was on the Illinois River, having been built in 1849 at Naples, Illinois, just north of Florence, the river landing for Pittsfield. She would, then, have been running at the time John Hay was growing up and going to school in Warsaw and Pittsfield. There was also a *Prairie Bird* running at that time on the Illinois River, and a *Prairie City* which did burn at St. Louis on December 7, 1855.

Now let us consider the steamer *Fashion.* John Hay must have kept in touch with his friends from Warsaw; he could not have heard the story of the *Fashion* while he was in school at Warsaw because the accident to the steamer did not occur until December 27, 1866. At that time Hay was in diplomatic service in Paris, Vienna, and Madrid. He must have seen Henry Fairchild in Europe or in the East.

According to testimony at the official investigation, the steamer *Fashion* caught fire at 3:30 p.m. when the boat was nearly opposite Wall's Store in Mulatto Bend, nine miles above Baton Rouge, Louisiana. She was said to be carrying between 350 and 400 people, many of them blacks and deck passengers. It is always hard to tell the real number of casualties in such an accident because no accurate record was kept of the deck passengers, and after such a tragedy as this the living and the dead were scattered for miles. Newspaper reports in St. Louis said there were not over eighty survivors, but the steamboat records show a death toll of only forty-three.

What is important to this story is that these same newspaper accounts say that the engineer on watch on the *Fashion* was indeed Oliver Fairchild, and he was not heard of after the fire. The dispatches said a good deal about the pilot of the *Fashion* who was on watch. As one report says: "Thomas Montague, pilot, stood boldly at his post in the midst of smoke and flames when most men would have quailed, and all honor to his memory."

At the official investigation the other pilot, Fred Ostrander, who was off watch, reminded the officials that Thomas Montague had been a courageous man. Ostrander said he had urged him to leave the wheel, as there was nothing more that could be done, but Montague had replied: "I will stay until she strikes (the bank)." Nothing was found in the newspapers (as far as I read them for several days after the date of the accident) about Oliver Fairchild, but it may have been recorded elsewhere.

As mentioned before, Oliver Fairchild was missing after the fire while many crew members were safely ashore. Who are we to say that he did not keep the steam going to the wheels that would "hold the nozzle agin the bank, till the last galoot's ashore"? It could have taken two to save the passengers on the *Fashion*: one who received the commendation in the newspaper of the day, and the other who is immortalized in verse, although under a different name.

There was another river event that may have had a bearing on this famous poem. There is no record that the *Fashion* was racing when she caught fire, but another boat that ran on the Illinois River did burn when she was racing just out of St. Louis. It was on April 22, 1858, when the *Ocean Spray* tangled with the *Hannibal City*. The deck crew of the *Ocean Spray* was throwing turpentine in the furnace to make more steam when some spilled and caught fire. Twenty-three persons died on the *Ocean Spray* that day, and word of the accident could well have reached John Hay.

Regardless of which event (or both) John Hay used as a basis for his poem, Jim Bludso will be immortal forever. He honors both engineers and pilots who stood by their wheel or throttle, at grave danger to themselves, to save the passengers on their stricken vessels, and paid with their lives for that loyalty. It is not surprising that Hay's poem was a standard recitation piece in many schools until the early twentieth century and still appears in some volumes devoted to local color realism or the literature of the frontier.

JIM BLUDSO
of the Prairie Belle

WALL, no! I can't tell whar he lives,
  Because he don't live you see;
Leastways, he's got out of the habit
  Of livin' like you and me.
Whar have you been for the last three year
  Tht you have n't heard folks tell
How Jimmy Bludso passed on his checks
  The night of the Prairie Belle?

He were n't no saint,-them engineers
  Is all pretty much alike,-
One wife in Natchez-under-the-Hill
  And another one here, in Pike;
A keerless man in his talk was Jim,
  And an awkward hand in a row,
But he never flunked, and he never lied,-
  I reckon he never knowed how

And this was all the religion he had,-
  To treat his engine well;
Never be passed on the river;
  To mind the pilot's bell;
And if ever the Prairie Belle took fire,-
  A thousand times he swore,
He'd hold her nozzle agin the bank
  Till the last soul got ashore.

All boats has their day on the Mississip,
  And her last come at last,-
The Movastar was a better boat,
  But the Belle she wouldn't be passed.
And so she come tearin' along that night-
  The oldest craft on the line-
With a nigger squat on her safety-valve,
  And her furnace crammed, rosin and pine.

And fire bust out as she clared the bar,
  And burnt a hole in the night,
And quick as a flash she turned, and made
  For that willer-bank on the right.
There was runnin' and cursin', but Jim yelled out,
  Over all the infernal roar,
"I'll hold her nozzle agin the bank
  Till the last galoot's ashore."

Through the hot, black breath of the burnin' boat
  Jim Bludso's voice was heard,
And they all had trust in his cussedness,
  And knowed he would keep his word.
And, sure's you're born, they all got off
  Afore the smokestacks fell,-
And Bludso's ghost went up alone
  In the smoke of the Prairie Belle.

He were n't no saint,-but at jedgment
  I'd run my chance with Jim,
'Longside of some pious gentlemen
  That would n't shook hands with him.
He seen his duty, a dead-sure thing,-
  And went for it thar and then,
And Christ ain't a going to be too hard
  On a man that died for men.[2]

NOTES

[1]Tyler, Dennett, *John Hay: From Poetry to Politics* (Dodd, Mead and Company, 1933), pp. 11-12.

[2]*The Complete Poetical Works of John Hay* (Boston: Houghton Mifflin, 1916), pp. 3-5.

THE HENNEPIN CANAL: NEW LIFE FOR AN OLD WATERWAY

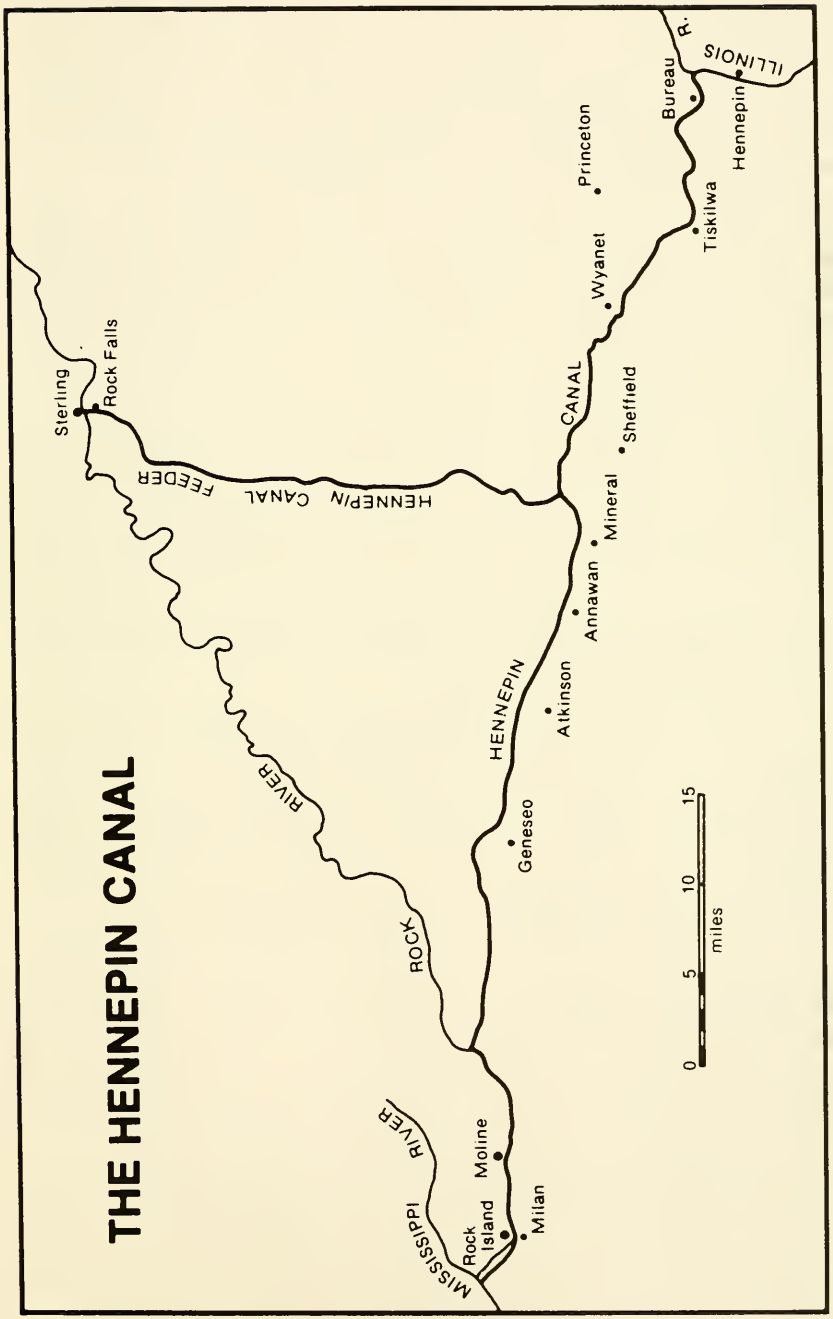
Gerald A. Newton, John A. McFarland and Donald W. Griffin

The Hennepin Canal is a unique cultural and historic feature of the northern Illinois landscape (Fig. 1). Envisioned as a major inland waterway link from the Upper Mississippi River to Chicago and Eastern markets, the canal was never a commercial success. Political pressures that began in the 1830s prompted the decision to build the Hennepin Canal. Later, local and regional politics, plus questionable construction decisions, ensured the canal's demise before the first boat was locked through the seventy-five mile main line in the fall of 1907.

These events are recounted elsewhere and will be summarized here.[1] A more important purpose is to detail how the Hennepin Canal evolved from an obsolete commercial waterway that was nearly abandoned to a recreational area of considerable potential. Toward this end, the problems in transferring canal ownership to the state are discussed as are the efforts to rehabilitate its deteriorated condition and develop the waterway into a premier state park.

Although a commercial failure, the Hennepin Canal has qualities that should not be overlooked. The canal's total length—the seventy-five mile main line and the twenty-nine mile feeder—make it the longest, continuous man-made waterway in the Midwest. Equally significant is that for the first time portland cement instead of cut stone was used to build the locks, aqueducts, and dams of a canal. This engineering and architectural innovation was later used in constructing the Panama Canal.[2]

Also, earlier American canals were built as a series of locks and waterways to by-pass an unnavigable portion of a river. Those waterways were supplied with water from the upstream end, or highest point of elevation on the river. Because the elevation of the Hennepin Canal was higher than the Illinois and Mississippi rivers, water was drawn from a still higher elevation on the Rock River. This engineering technology was also used in the construction of the Panama Canal. Finally, throughout its history the canal served as a favored recreational area for the people of the region


THE HENNEPIN CANAL
Sterling
Rock Falls
HENNEPIN CANAL FEEDER
RIVER
ROCK
MISSISSIPPI RIVER
Rock Island
Moline
Milan
Geneseo
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Atkinson
Annawan
Mineral
CANAL
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0 5 10 15
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Figure 1.

The Hennepin Canal's effective life as a commercial inland waterway was relatively short. The Milan section, which by-passed the lower rapids of the Rock River, was opened to traffic in the spring of 1895. Construction of the main line and the canal feeder began in 1894 and took thirteen years to complete, in large part because of delayed right-of-way acquisitions, lawsuits on canal bridge construction and maintenance, and engineering problems with a peat bog northeast of Sheffield.

The peak year for commercial traffic was 1929 when slightly more than 30,000 tons of freight were transported through the canal.[3] Yearly tonnage totals decreased in the 1930s and 1940s, in large part because of the Great Depression. The advent of truck transport, the proximity of the Chicago, Rock Island and Pacific Railroad, and canal deterioration further reduced freight moved on the waterway. Interestingly, recreational navigation increased during the post-World War II years.

On April 7, 1948, the Corps of Engineers placed the canal on a limited service basis. This meant that arrangements had to be made one day in advance for navigation on Thursday and Friday and one week in advance for commercial tows on Monday, Tuesday, and Wednesday. Advance notice was needed so that a minimal labor force could be on hand to operate the canal's locks and bridges.[4] Three years later, the corps made the decision to close the canal to navigation because operational costs greatly exceeded its commercial value. The corps also announced its plans to dispose of the canal property.[5] On July 1, 1951, the Hennepin Canal was closed to commercial traffic.

On June 26, 1951, just four days before the scheduled closing of the canal, the Illinois senate quickly passed Resolution No. 84. The resolution requested that the corps postpone abandonment of the canal until the state could take action to use it for recreational and conservation purposes.[6] The corps complied and the canal was placed on standby maintenance, but remained open for recreational use. The canal water level was reduced to five feet and only minimal repairs were made.[7]

Subsequently, three studies assessed the value of converting the canal into a recreational area. The Illinois Department of Conservation estimated that it would cost approximately $2.5 million to complete the conversion. A Corps of Engineers' report discussed complete and partial abandonment and recreational development.[8] The third study was conducted by the National Park Service at the request of the Corps of Engineers. This study estimated that $150,000 in annual operating costs would be needed to maintain the canal as a recreational area.[9]

Each study recommended that the canal be converted to a recreational and conservation area. In response to those findings, in 1953 the Illinois General Assembly created the Illinois and Mississippi Canal and Sinnissippi Lake Commission. (Lake Sinnissippi was created on the Rock River to provide water to the Hennepin Canal feeder.) The commission had three purposes: to study the feasibility of converting the canal into a

recreational area, to meet with federal and state officials and private citizens to devise a plan for the canal, and to report findings and recommendations to the Illinois General Assembly.[10]

Initially, the commission discovered two legal problems associated with the canal. The first problem was that the land under Lake Sinnissippi was not owned by the federal government. Instead of having a fee simple title as the rest of the canal property, the lake area only had a flowage easement. This means that if the canal were abandoned, the land under Lake Sinnissippi would revert back to its original owners.[11] The second problem was found in the Illinois Constitution, which prohibited the general assembly from appropriating state funds to a canal or a railroad. In other words, the state could neither own nor operate the Hennepin Canal.

After conducting four public hearings on converting the canal to a park and meeting with federal officials and Illinois congressmen, the commission reported its findings to the Generaly Assembly of Illinois. The report discussed citizen desire for the canal to become a recreational area, outlined the legal problems that existed, and recommended that the legislature memorialize (petition) Congress for the following requests:

1. The Corps of engineers should continue to maintain the canal on a standby basis until the state could assume control;
2. The canal and Lake Sinnissippi should be designated a national park or monument or be placed under the U.S. Fish and Wildlife Service; and,
3. Federal agencies should be authorized to convert and develop the canal and lake into a recreational area.[12]

The Corps of Engineers did continue standby maintenance, but the other two requests were much harder to carry out. After conducting a study, the National Park Service determined that the canal and Lake Sinnissippi could not become a national park or monument because scenic and historic requirements were not met. However, the National Park Service did recommend that the canal be rehabilitated prior to ownership transfer to the state. This recommendation became a major stumbling block for the next seventeen years.

A number of problems had to be resolved before the federal government transferred canal ownership. One was eliminated when the state repealed, through referendum, the Illinois Constitution provision that prohibited state expenditures on canals.[13] Another problem dealt with what agency of the federal government and the state would negotiate the transfer of canal ownership. The passage of Illinois House Bill 1021 on July 13, 1955, partially resolved the matter. The act designated the departments of Conservation and Public Works and Buildings to negotiate for the state. The negotiations were to discuss repairs and modifications to the canal prior to ownership transfer, the acquisition of land under Lake Sinnissippi, and the responsibility for maintenance of railroad bridges that crossed the canal. Once ownership transfer occurred, the canal would

become a state park and be supervised by the Department of Conservation.[14]

For the next three years bills were introduced in Congress that dealt with the preconditions of ownership transfer. Most of these bills failed to pass both houses of Congress. Finally in July of 1958, Congress passed Public Law 85-500 which, although not transferring canal ownership, did remove most of the obstacles to the state accepting deed to the waterway.

The law authorized the secretary of the Army to spend up to $2 million to purchase the land under Lake Sinnissippi and to repair and modify the lake and canal so as to create a recreational area. The bill also suggested that an attempt be made to transfer ownership and maintenance of railroad bridges to the respective companies, authorized the state of Illinois to use a proper amount of water from the Rock River for public recreational operation of the canal, and designated the corps' chief of engineers as negotiator in the ownership transfer agreement with representatives of the state of Illinois.[15] The transfer agreement was necessary before any work on the canal could be done by the Corps of Engineers. Once the transfer agreement was made, the federal government no longer would be responsible for the canal.[16]

However, before the ownership transfer could officially take place, the corps and the state had to determine what modifications and repairs were necessary to convert the canal from a navigation route to a recreational area. In 1960, after two years of analysis, an agreement was reached between the federal government and the state whereby the latter agreed to accept the $2 million authorization to begin canal repairs, but reserved the right to request additional federal funds.[17]

In 1961, the Corps of Engineers began work according to a priority list set in the 1960 agreement. By the end of the year a number of locks had been modified. In order to maintain a water depth of five feet, old gates and machinery were removed and a concrete headwall was placed at the upper end of each lock and any deteriorating concrete was repaired. Culverts and flushing wells on the feeder were also repaired, and repairs were made to the control section of the Government Dam at Lake Sinnissippi and to the control machinery and building.

Congress appropriated another $800,000 for canal rehabilitation in October of 1962, but the funds were to be used only after the state accepted ownership.[18] This amount fell far short of the $10 million the state felt was needed for total canal rehabilitation. Because the 1960 agreement stipulated that the state would acquire title to the canal property after the appropriation was made, repair work halted and the ownership transfer did not occur.

The remainder of the decade was spent in seeking national recognition and additional federal funding for the canal. Again, national park status was promoted, but following another Department of the Interior study and

a personal tour of the canal by Secretary Stewart Udall in 1965, designation was denied.[19]

In 1967, congressmen Robert Michel and Tom Railsback introduced legislation to appropriate $10 million for canal rehabilitation. While the legislation did not pass, the Corps of Engineers suggested that federal funds might be appropriated if the amount were reduced to $5.5 million. As a result, a bill was introduced in Congress on September 30, 1969, amending the 1958 act to authorize an additional $5,728,000 for repair and modification of the canal.[20] Although the bill failed to pass Congress, the prospect of subsequent, similar federal legislation was used to negotiate a transfer of canal property to the state.

On November 19, 1969, Governor Richard Ogilvie accepted the ownership transfer. Later, on August 1, 1970, the transfer became official when the Illinois attorney general approved the ownership deed to the canal. On December 31, 1970, Public Law 91-611 was enacted, including an appropriation of $6,528,000 for canal rehabilitation. The appropriation combined the $800,000 authorized but unspent in the 1962 act and the $5,728,000 recommended in 1969.[21]

The canal was designated the Hennepin Canal State Trail and placed under the supervision of the Department of Conservation. One of the first actions taken by the department was to develop a funding schedule for the $6,528,000 authorized in PL 91-611. Most of the funds were to be spent on bridge repair and rehabilitating canal banks and other hydrologic structures that had deteriorated greatly during the nearly twenty years of standyby maintenance. Also, it was necessary to make emergency repairs because of breaks in the canal banks. Most of the breaks were in the eastern section of the canal and were associated with severe flooding of Bureau Creek which paralleled the waterway above the Illinois River.

However, the Corps of Engineers halted all rehabilitation work on the canal in 1974 pending the outcome of a lawsuit filed by Bureau, Henry, and Whiteside counties against the federal government over bridge maintenance. The lawsuit stemmed from a disagreement over who should pay for rebuilding and repairing the canal bridges. According to an August 5, 1898 decree, the federal government was responsible for maintaining the bridges in perpetuity. In 1955, as initial negotiations for ownership transfer were underway, the general assembly passed a statute delegating bridge maintenance to counties and townships. Once the state accepted canal ownership in 1970, these units of local government became responsible for the upkeep of the seventy-year-old bridges. The counties who brought suit felt that the state statute was unconstitutional because it violated the 1898 decree.

After six years, a 1980 ruling ordered the federal government to pay $2.8 million for repairs to existing bridges. The opinion stated that no repairs had been made on the bridges since 1945, leaving them structurally and functionally deficient when the state acquired the canal in

1970.[23] The counties were not satisfied with the ruling because the federal government was only required to pay for repairing or replacing the bridges. At the same time, the federal government appealed the $2.8 million award. Finally, in July of 1981 the district court of appeals upheld the earlier ruling and awarded the three counties $3.2 million—the original $2.8 million, plus interest.[24]

Although federal monies were withheld during the lawsuit, canal improvements were made with state funding. In 1976, the Hennepin Canal Visitor Center was opened at a 400-acre recreational area northeast of Sheffield. The site also includes a waterfowl observation area, a day use area, and four canal service buildings. Other recreational facilities were built along the canal route with state funding.

In early 1977, the Department of Conservation applied to the National Register of Historic Places to the include much of the canal as a National Historic District. Entered in the register on September 17, 1977, the district includes all of the original canal right-of-way except for a small section near the Illinois River and the four-and-one-half-mile Milan section that by-passed the lower rapids of the Rock River.[25] Also, the department designated an 176-acre, 3.95-mile segment of the canal corridor south and east of Wyanet as an historic zone because of its unusual concentration of locks, locktender homes, and other structures.[26]

In October of 1981, the Department of Conservation held a public meeting in Princeton and presented three options for the canal's future. One was the complete rehabilitation of the waterway. A second option was partial rehabilitation with portions of the eastern and western sections abandoned as water-based recreational areas. The third option, and the most drastic from the standpoint of canal supporters, was to drain the canal, level the banks to fill in the prism, and limit recreation to land-based activities.

Of the more than 300 persons at the public hearing, more than 90 percent supported complete rehabilitation of the Hennepin Canal.[27] While complete rehabilitation would cost approximately $20 million, the third option, complete abandonment, would require $10 million to complete.[28] Subsequently, the department appointed a task force to prepare a plan for the canal that called for maximum rehabilitation. The result was the *Hennepin Canal State Trail Master Management Plan*, which was approved on February 28, 1983.

The plan divided the canal into three land use zones. The first zone is the 176-acre, 3.95-mile section near Wyanet that was mentioned previously. The second zone comprises isolated tracts of natural areas dispersed along the canal that collectively total 87 acres. The third zone encompasses the remaining 4,050 acres. Referred to as the corridor resource zone, the area will be the focal point for recreation.[29]

The plan will be implemented in three phases or levels. Initially, hydrologic structures will be renovated with emphasis placed on restoring

and repairing the canal's banks. Breaks have always been a problem on the canal, and at present the area below Lock 13 has no water in the prism. The second phase will expand recreational facilities while the third phase will feature cultural heritage restoration and interpretation. The three phases will take place over a ten-year period and will cost slightly more than $24 million.[30]

The Hennepin Canal never achieved its main purpose, which was to provide an efficient means of commercial transportation between the Illinois and Mississippi rivers. However, the canal has served as a major recreational facility from the time of its opening in 1907. Through the efforts of many citizens and groups who have supported preserving the canal, and the commitment by the Illinois Department of Conservation to enhance and expand its many qualities, the waterway will be both a recreational asset and an historic landmark to be enjoyed by present and future generations.

Hennepin Canal State Trail Visitor Center.

Restored miter gates at Lock 16. Lock 15 is visible in the distance.

Restored Marshall gate at Lock 16.

Concrete headwall at the upstream end of Lock 21.

Lift bridge at the downstream end of Lock 21.

Dry canal bed at Lock 11. A typical canal truss bridge is in the background.

NOTES

We wish to thank Bruno Pomatto of Spring Valley, Illinois, for his help in reconstructing the canal's history from 1951 to the present.

[1]See, for example, Donald W. Griffin, "Recollections of the Hennepin Canal," *Western Illinois Regional Studies*, 1 (Spring, 1981), 50, Mary M. Yeater, "The Hennepin Canal, Part Three," *Bulletin of the American Canal Society*, No. 21 (May, 1977). (Reprint.); "Hennepin Canal Historic District, National Register of Historic Places Inventory Nomination Form," July 29, 1977 (Archives and Special Collections, Western Illinois University Library), p. 18. (Prepared by Mary M. Yeater.), and, Gerald A. Newton and Donald W. Griffin, *History of the Hennepin Canal* (Western Illinois University, Institute for Regional, Rural, and Community Studies, March, 1984)

[2]Griffin, p. 50

[3]Ibid., p. 56

[4]Report of the War Department, Report of the Chief of Engineers, U.S. Army (1948), p. 1575.

[5]Report of the War Department, Report of the Chief of Engineers, U.S. army (1951), p. 1257.

[6]Ruth J. Armstrong, "The Illinois and Mississippi (Hennepin Canal)" (unpublished Master's Thesis, Illinois State University, 1961), p. 46.

[7]"Hennepin Canal Historic District, National Register of Historic Places Inventory Nomination Form," p. 27.

[8]John Joseph Steinbach, "History of the Illinois and Mississippi Canal" (unpublished Master's Thesis, Illinois State University, 1964), p. 95.

[9]Armstrong, p. 47.

[10]Illinois, House, *House Bill Number 71*, 68th General Assembly, February 27, 1953. Cited by Armstrong, p. 97.

[11]Steinbach, p. 99.

[12]Illinois and Mississippi Canal and Sinnissippi Lake Commission Report to the 68th General Assembly of the State of Illinois, May 15, 1953. Cited by Steinbach, pp. 103-04.

[13]Illinois, Constitutional Amendment, November, 1954. Cited by Steinbach, p. 105.

[14]Steinbach, pp. 106-07.

[15]Ibid., p. 111.

[16]U.S. Statutes at Large, LXXII, Part 1, pp. 32-3. Cited by Steinbach, p. 112.

[17]U.S. Agreement between U.S. and the State of Illinois for Repair Modification and Transfer of the Illinois and Mississippi Canal, Contract No. DA-11-117 CIVENF-61-130.

[18]Public Law 87-874.

[19]"Hennepin Canal Historic District, National Register of Historic Places Inventory Nomination Form," pp. 27-30.

[20]Illinois Department of Conservation Office Memorandum, May 11, 1973, p. 2.

[21]Ibid., p. 3.

[22]Dick Brennan, "Counties Sue for Repair of 67 Bridges," *Davenport Times Democrat*, 4 July 1974.

[23]Craig Brown, "$3 million Order for Canal Bridges," *Quad City Times*, 6 May 1980.

[24]Bruno Pomatto, "The Illinois-Mississippi (Hennipin) Canal and Sinnissippi Lake," Report to the Citizens' Task Force on the Hennepin Canal, March 10, 1984, p. 6.

[25]Illinois Department of Conservation, *Hennepin Canal State Trail Master Management Plan* (1983), p. 9.

[26]Ibid., p. 37.

[27]Judy Groves, "Northern Illinois' Historic Canals: Resource with a Future?" *Outdoor Recreation in Illinois Planning Update*, 2, No. 1 (Winter, 1982), 6.

[28]Charles Tamminga, Department of Conservation, Testimony to the Citizens' Task Force on the Hennepin Canal, April 8, 1984.

[29]*Hennepin Canal State Trail Master Management Plan*, p. 37.

[30]Ibid., p. 94, 105.

TAMING THE RAPIDS OF THE UPPER MISSISSIPPI

Roald D. Tweet

When Father Marquette and Louis Joliet reached the mouth of the Wisconsin River on June 17, 1673, and discovered the Upper Mississippi, they were too late. Several cultures of prehistoric Indians had used the inland waterways of North America for thousands of years. Excavations of Indian mounds along the Mississippi Valley have revealed trade items from Mexico and the Rocky Mountains, Hudson Bay, and the Gulf Coast. Settlements of prehistoric and historic Indians had spread along these routes.

Marquette and Joliet were followed by La Salle and his expeditions, and then by other explorers, trappers, fur traders, and missionaries—French, English, and Americans in turn. For all of these groups, the water highways provided free transportation throughout the eastern two-thirds of the continent. White settlements, like the Indian, followed the water.

As often happens, however, nature's plenty was nearly matched by her perversity. Almost every channel in this system, from the Mississippi and Ohio to the Des Moines and the Pecatonica, was clogged by a bewildering assortment of what came to be known as "obstacles to navigation." Snags, sandbars, swift currents, shallows and rapids, shifting channels and submerged rocks made travel by water difficult and often dangerous.

Each river seemed to have its own set of obstacles, and the Upper Mississippi was no exception. Rather than the "mile-wide tide, shining in the sun" made famous by Mark Twain, eighteenth and nineteenth century travelers found the Mississippi north of St. Louis to be a modest stream generally less than four feet deep, full of changing sandbars which appeared in unexpected places, and a low water season most years which made long stretches impassable from August on.

Human ingenuity devised a number of boats adapted to these conditions. The Indian birch bark canoe, the similar but much larger French pirogue, and the American keel and flatboats were able to transport tons of cargo on inches of water. However, even these boats

had difficulty with the two major obstacles to navigation above St. Louis: the rapids which stretched for eleven miles above the mouth of the Des Moines River and for fourteen miles above the mouth of the Rock River. Especially during low water, travel for all but the smallest boats was dangerous on the Rock River Rapids (the name was changed in the 1850s to the Rock Island Rapids)[1] and impossible on the Des Moines Rapids.

These rapids of the Upper Mississippi were remarkably unlike the image of rapids in most minds. At Rock Island the river channel was comparatively young. The ancient Mississippi south of Clinton, Iowa, had been pushed first into central Iowa and then into central Illinois by three successive glaciers. Not until the Iowa and Tazewell glaciers 20,000 years ago was the river forced out of its natural valley to run east and west across a stretch of hard rock. This constricted channel, barely worn down, was the Rock Island Rapids. These rapids consisted of seven projections, or chains, of rock which reached out from both the Iowa and Illinois shores for fourteen and one-half miles upstream from the foot of Rock Island (now called Arsenal Island). Between the individual chains were pools of deep water, but the chains forced the current and the channel to twist, sending boats sideways against the current and constricting the channel at each chain. The Rock Island Rapids was passable except in very low water, but it was always dangerous.

The Des Moines Rapids were even less like normal rapids. Here the Mississippi in wearing down its channel between the bluffs had come across the outlet for ancient Lake Calvin which once covered much of Iowa. This outlet consisted of an eleven-mile layer of cherty limestone of the Keokuk series, much harder than layers above it. The layer lay at virtually the same incline as the slope of the river and formed a relatively smooth rock bed which behaved like a dam with deep water behind it. Although the several shoal stretches at these rapids were called chains, as at Rock Island, they were merely unconnected indentations worn by the current and provided no channel at all. The Des Moines Rapids lacked the customary ripples which served as a guide for pilots. Of the two rapids, then, this was the more serious obstacle.

The advent of the steamboat on the Mississippi in 1811 soon exacerbated the problem of the rapids. In the hands of Mississippi river men, the steamboat adapted quickly from the round-bottomed ship designed by Fulton in imitation of ocean vessels to the wide, flat-bottomed Mississippi steamboat four stories high which could float, some claimed, on beer foam or heavy dew. On the Lower Mississippi below the mouth of the Ohio, the steamboat rapidly dominated river traffic. In 1817, the first steamboat reached St. Louis when the *Zebulon M. Pike* steamed to the foot of Market Street,[2] but not until 1820 did a steamer venture north of St. Louis. In that year, the *Western Engineer* commanded by

Major Stephen H. Long, made its way up to Keokuk at the foot of the Des Moines Rapids following an exploration of the Missouri River.[3]

By then, St. Louis was already engaged in steamboat trade with Pittsburgh and New Orleans, but river men believed that no steamboat would ever cross the rapids. Trade above Keokuk was confined to keelboats and flatboats. At the same time, there was a growing need for improved transportation on the Upper Mississippi. Military forts at Rock Island, Prairie du Chien, and Fort Snelling needed regular supplies. The lead mining carried on modestly at Dubuque and Galena since the early eighteenth century expanded in the 1820s to supply the United States with lead. By 1825, 100 mines were operating in the Galena region. A year later there were 453.[4] Ore shipments outstripped the small boats on which they had depended.

In response to the need, American tinkerers sent a boat across the rapids sooner than anyone expected. In May of 1823, a small steamer, the *Virginia*—little more than a flatboat with an engine on deck, and so slow that passengers could walk along shore for exercise and meet the boat again upstream—crossed the Des Moines Rapids bound for Fort Snelling with passengers and military supplies. Fortunately for historical record, one of the passengers was the world traveler, Count Giacomo Beltrami, on his way to discover the source of the Mississippi.[5] The *Virginia* stopped at Fort Armstrong at the foot of the Rock Island Rapids. In trying to leave the fort, she stuck fast on rocks in the rapids and, according to Beltrami, "had not Providence come to our aid and swelled the waters of the river for two days, the steam-boat would perhaps have remained nailed to the rock."[6] But the *Virginia* reached Ford Snelling, returned to St. Louis, and made another round-trip in June. Four years later, 100 steamboats from Galena alone brought thirteen million pounds of lead downstream past St. Louis.

Even before the *Virginia's* voyages, steamboat interests, state governments, and almost every city and village along the inland waters had been petitioning Congress to improve navigation. The work was so experimental and extensive that no individual town or state could afford it, while most steamboat companies were one-man, one-boat operations, in contrast to the well-financed railroad corporations of later years. As a result of the petitions, river improvement conventions, and political pressures, Congress in 1824 appropriated $115,000 for improvement work, the first of what were to become regular annual appropriations for "rivers and harbors." More important, Congress also passed the General Survey Act which gave the president authority to employ officers of the Corps of Engineers to make surveys "as he may deem of national importance."[7] By this act the Corps of Engineers became responsible for most navigation improvement, a policy continued to this day. Work on such civil projects was justified by considering much of the improvement work to be of military value, and because such work gave military

engineers practice they could use in wartime.

Early appropriations were used primarily to clear snags between the mouth of the Ohio and New Orleans. No appropriations reached the more sparsely settled Upper Mississippi until 1828. Late in that year, Chief of Engineers General Gratiot ordered Lieutenant Napoleon B. Buford, 3d Artillery, on Topographical Duty, to "make reconnaissance and survey of the Des Moines and Rock River rapids with a view to overcoming the obstacles to navigation at those points."[8]

With soldiers sent down from Ford Armstrong, Lieutenant Buford began a survey of the Des Moines Rapids on February 13, 1829. He made both a topographical map and a profile of water levels. Though his map was too general to be of much use to later engineers, it was quite accurate, considering that the river was covered by a foot of ice and nine inches of snow.

Buford's report noted that the exception of the two rapids, the Upper Mississippi was navigable by boats of 4½-foot draft for eight months each year.[9] The rapids reduced the navigation season to the four months of high water in spring and early summer. Buford investigated improving the rapids by excavation and by a lateral canal, and concluded that the problems of constructing a canal, particularly at the Des Moines Rapids, were "almost insurmountable."[10] He recommended blasting out a channel at both rapids.

Lieutenant Buford pointed out both the military and commercial advantages of improving the rapids, with the primary advantage being the Galena lead trade. Ten thousand workers were mining lead at Galena by 1829, and the Port of Galena was by far the busiest steamboat landing north of St. Louis.

Congress took no action on Buford's report. Seven years later, General Gratiot asked Henry Shreve, a longtime river man and corps employee who had invented the snagboat to remove snags on the Lower Mississippi, to make recommendations for improving the two rapids. Shreve made a far more detailed exploration of the rapids than Buford had. At the Rock Island Rapids, he recommended that the Government "establish Pilots authorized by law to be located at the Rapids with fixed salaries."[11] Such pilots who knew the rapids would board boats prior to crossing and steer them safely through.

At the Des Moines Rapids where there was really no channel at all, Shreve recommended excavating an artificial channel along the Iowa side of the river so that the shoreline could serve as a guide for pilots day and night.[12] He felt that even if a channel could be excavated in the rapids themselves, it would be hard to find, especially at night.

The following year, the act of March 3, 1837, appropriated $40,000 for improvement of the Mississippi above the mouth of the Missouri River. To begin the actual improvement work, General Gratiot assigned a recent West Point graduate for whom he had taken a liking, Lieutenant Robert E.

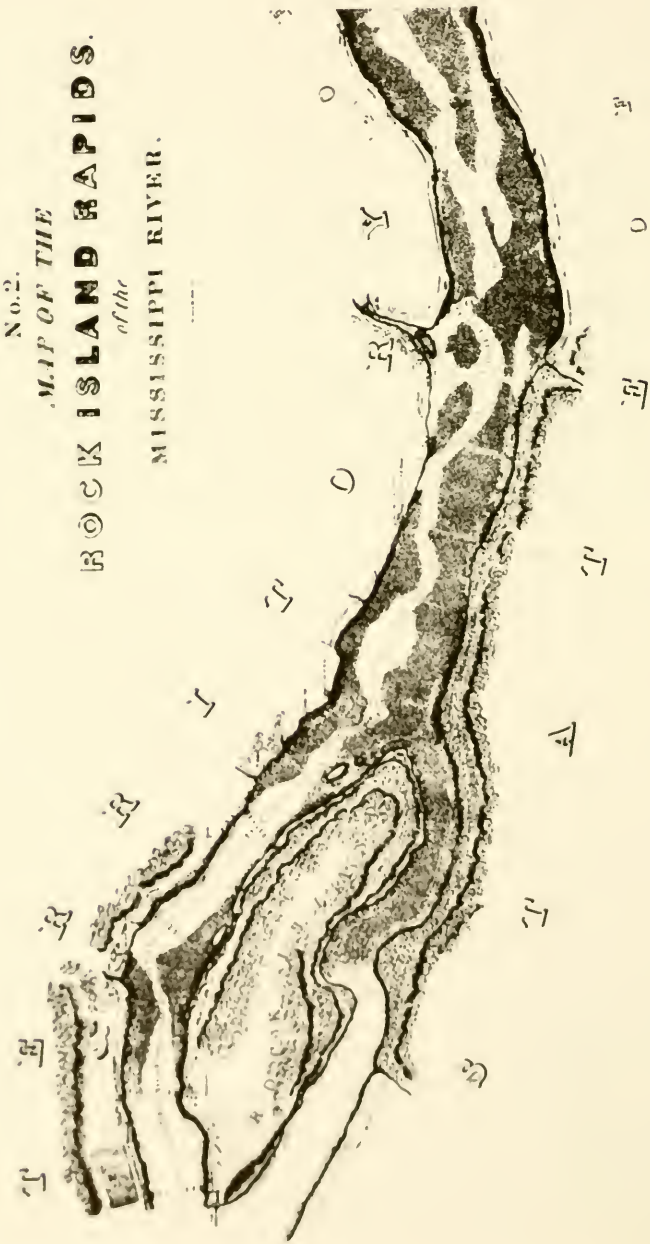
Lee (who went on to Civil War fame). As Lee's assistant, Gratiot appointed Lieutenant Montgomery Meigs, another West Point graduate of twenty-one. (Lieutenant Meigs went on to supervise several important corps projects, including the Capitol dome and the Washington Aqueduct in Washington, D.C. Meigs's son later became the engineer in charge of the Keokuk office of the Rock Island District Corps of Engineers.)

Lee and Meigs were directed to resurvey the two rapids, determine a plan for their improvement, and begin such work as funds would permit. They arrived in St. Louis in August of 1837, and headed upstream with the boats and equipment Shreve had used a year earlier. Lee had intended to begin his survey at the Rock Island Rapids, but their steamboat ran aground on the Des Moines Rapids near Keokuk, so the survey began there. They used the grounded boat as headquarters for the first four miles of survey, and then camped along the Iowa shore as they moved up the rapids. Being from a good Virginia family, Lee found the Iowa frontier a bit rough. In a letter to a friend back East, he described arriving at the city of Des Moines (not the present-day Des Moines), "composed of the worst kind of small log cabin which contained the proprietor and the entire population. Here we were kindly received and all accommodated with the softest Puncheon on the floor. How much I would tell you of this same city, its puncheons, dwellings and inhabitants, but I must look to my limits."[13]

Leaving their boat behind, Lee and Meigs moved to the upper rapids where they found Davenport and the new town of Stephenson (later Rock Island) more civilized. For accommodations, Lee moved his survey party onto a steamboat that had wrecked and been abandoned in the middle of the rapids. The bottom was gone, but the two top decks remained out of water. Lee's party lived well here, fishing for blue catfish over the side of the boat in the evenings.[14] "I assure you," he wrote to a friend, "we were not modest, but fell without difficulty into the manners of the country, and helped ourself to everything that came our way."[15]

Lee's boat had floated free when he returned to Keokuk, and he left for St. Louis to write his reports before returning East for the winter. His maps and reports on the rapids were more detailed than Buford's, but Lee was just as mistaken in estimating the ease with which improvements could be made.[16] At the Des Moines Rapids, he recommended cutting a channel 200 feet wide and 5 feet deep out in the river, estimating that this would require only one-third of the effort needed to construct a lateral canal. He felt that cutting through the Rock Island Rapids would be even easier, merely cutting off projecting points of rock where the turns were short or the channel narrow. In estimating that the entire project would require $189,622 and the Des Moines Rapids and $154,658 at Rock Island, Lee was short by just about five million dollars.

Lee, now a Captain, returned to St. Louis the following spring to resume work on the rapids and the St. Louis waterfront. He sent a new



A section of Captain Robert E. Lee's map of the Rock Island Rapids. Arsenal Island is on the left. Courtesy of the Rock Island U.S. Army Corps of Engineers.

assistant, Horace Bliss, to supervise the work at Keokuk. Bliss soon experienced the vagaries of the Mississippi which would plague nearly every improvement project. He arrived at the rapids in May when the water should have been dropping; instead, it rose, idling Bliss and his crew for weeks. Bliss was about ready to give up for the season when the water fell, and he set his crew working on the Illinois Chute cutting out rock. Just as the work began, cold weather hit and Lee had to double the wages of the few hardy men who remained on the job. On the night of October 16 the river froze. The next day it snowed heavily, and Lee and Bliss had to abandon the work. Only enough work had been done to convince Lee that a channel could be cut.

The 1839 season went just as badly, this time because of money problems. The Panic of 1837 and the deepening depression which followed cut off congressional appropriations, forcing Lee to use the small sums left over from previous appropriations. The 1839 season marked the end of Lee's work on the rapids. In two seasons he and Bliss had managed to cut a channel fifty feet wide and four feet deep through about four miles of the worst stretch of rapids, but the work was experimental and tentative, and had little effect on navigation.

The real value of the work Lee and Bliss did on the Des Moines Rapids was that they developed methods for blasting rock under water which were used, with improvements, for most of the rest of the rapids improvements over the next seventy years. Their method consisted of placing iron tripods over the rock to be blasted. The tripod supported a platform for workers and served as a drill guide. Using the tripod, workers drilled a 1 ¾-inch diameter hole through 2/3 of a rock stratum (Lee found it impractical to remove more than one layer of rock at a time). A one-half pound charge of blasting powder was placed in a tin tube, and the remainder of the tube was filled with sand and placed in the drill hole so that it was supported by the tripod. The effect of such an explosion was to split the rock into large pieces which could be removed by a derrick boat. In this way, underwater blasting could be done almost as economically as on shore.[17]

For the next twelve years only scattered surveys and a small amount of improvement work—none of it at either rapids—was carried out. Meanwhile the need to improve the rapids was growing. In 1846, 663 steamboats arrived at St. Louis from the Upper Mississippi, more than from anywhere else.[18] Passengers became the main upriver commodity as immigrants flooded into the Midwest. In the years after Minnesota became a territory in 1849, passenger traffic north of St. Louis dwarfed the Gold Rush to California.[19] Steamboat arrivals at St. Paul reached 1,026 in 1856-7 as 90,000 immigrants came to Minnesota.[20]

The increase in river commerce resulted in the passage of the Western Rivers Improvement Act in 1852 which placed river and harbor work more firmly under the direction of the Corps of Engineers. As part of the

act, Congress appropriated $100,000 for renewed work on both rapids, and appointed Major Stephen H. Long as Superintendent of Western Rivers. On July 1, 1853, Long placed Captain Joshua Barney in charge of the Rock Island Rapids improvement and Captain John Floyd in charge of the Des Moines Rapids.

Captain Barney advertised in midwestern and eastern newspapers for contract work to begin in October, 1853, but received no acceptable offers. Contract work was to be a continual problem on the Upper Mississippi. Most of the work was so experimental that few contractors had the knowledge or equipment to make reasonable bids. Further, since congressional appropriations were made yearly and unevenly rather than by the job, few contractors were willing to take a chance investing in expensive machinery.

While Barney and Floyd were trying to get work started, Major Long detailed another of his assistants, Lieutenant Gouverneur K. Warren, to make a third survey of the rapids "to determine the most direct favorable and economical passes or routes along the bed of the river for the formation of a continuous navigable channel at least two hundred feet wide and four feet deep at the lowest stage of the river ever known or likely to occur again."[21] He was to mark the rapids into mile lengths, note how much and what kind of improvement was needed in each, find a place to put the spoils, and mark the proposed channel with buoys and landmarks.[22]

This survey was the first of many duties Warren performed on the Upper Mississippi. Warren received his training in 1850 when, as a new West Point graduate, he was assigned to the Mississippi Delta Survey, the first comprehensive examination of the entire Mississippi River. He would go on to an important role in the Civil War, where historians credit his planning and quick thinking at Little Round Top with being decisive for the North at the Battle of Gettysburg. Warren returned to the Upper Mississippi after the War to assemble the first Rock Island District Corps of Engineers fleet and to help design and construct the Government Bridge connecting Davenport to Arsenal Island.

Warren's survey of the Rock Island Rapids took from June 1 to September 1, 1853; he surveyed the Des Moines Rapids between September 22 and December 1. The surveys took this long in part because of high water and a lack of cooperation from Barney and Floyd, and because Warren worked in a careful and meticulous manner. The comprehensive Warren Report was published in 1854.

In his report, Warren agreed with earlier studies that the Rock Island Rapids was less of a problem than the Des Moines Rapids. Low water at Rock Island still gave a 2½-foot natural channel, and this had been raised another ten inches by damning the small channel which separated Rock Island from the Illinois shore. The dangers at Rock Island were the crooked channel and the unpredictable and swift current which made

traffic very slow. On one occasion when Warren was forced by the current to tow his rowboat up the rapids from shore, he arrived at the head of the rapids before a steamboat which had left Davenport at the same time.[23] During the 1853 season, two steamboats had been wrecked on the rapids with an average loss, including freight and wages, of $50,000 each.[24] Warren agreed with past reports in recommending straightening and deepening the natural channel here.

Because river men had long supported Shreve's recommendation for a lateral canal around the Des Moines Rapids, Warren made a close examination of the existing shore channel on the Iowa side. The channel here had only ten to twelve inches of water in many places and was used wholly by "lighters," horsedrawn flatboats carrying from one to two hundred tons of goods. Lighters were needed at the rapids in low water to relieve the large packet steamers of their cargo so that the steamers could cross the rapids.

Lighters were expensive and slow. Warren reported that lighters needed "luck and eight horses" to make the trip from Keokuk to Montrose (at the head of the rapids) in six hours.[25] In 1853, the charge for lightering goods was $1 per ton downstream and $1.25 per ton upstream. In addition, Warren reported, the money lost by waiting steamboats was even greater because "salaries are paid as high as 35¢ per hour" to crew members.[26] The rapids drove other wages up as well. Warren was unable to hire rowers for his survey, even at $1.25 per day, because "the great quantities of freight at both ends of the Rapids gives employment to every industrious man at high wages."[27]

Lightering was not a new industry at the Des Moines Rapids. Indian villages had sprung up at the sites of Keokuk and Montrose to service early French fur traders whose laden vessels could not cross the rapids.[28] In 1805 when Lieutenant Zebulon Pike made his famous exploration up the Mississippi to locate sites for forts, he, too, had needed the services of Indian lighters.[29]

While Warren foresaw that a lateral canal at the Des Moines Rapids might become the permanent method of improvement, he was also aware of the vagaries of government appropriations. A canal would not be of use until it was entirely completed, so Warren recommended spending the limited funds available on improving the natural channel.

With John Floyd now in charge of both rapids, contract work began with the low water of August, 1854. It continued on a modest basis for the next three years. Using the drilling and blasting methods developed by Lee, contractors at the Des Moines Rapids worked on the English Chain at points designated by Warren as Centre and Browne's patches. Centre Patch was removed to a low water depth of six feet, and Brown's Patch was removed to a depth of five feet. At Rock Island, contractors worked at Campbell's and Sycamore chains, obtaining, at Campbell's Chain, a channel 100 feet wide and 4 feet deep.

These efforts soon made those in charge realize how optimistic earlier engineers had been. A single rock in Brown's Patch required two men four days to drill a hole twenty-three inches deep and dulled seventy-two steel points. At Campbell's Chain, four men took two weeks to remove 2½ feet of rock projecting into the channel.[30] Major Floyd saw that at a present rate of work, improvement of the rapids might take "forever."[31]

In spite of powerful new steam drills and chisels designed by Floyd and put into use in 1855, the work slowed. The Corps of Engineers found it increasingly difficult to find contractors to do the work, and contractors found it impossible to hire men to complete their contracts. The reason was competition from railroads, coming west as fast as possible. Not only was the railroad fever grabbing up men for good wages, it was also shifting public interest away from water navigation. The Corps of Engineers got little notice for some of the real improvements that they made on the rapids. We're not really interested in it, claimed one Davenport newspaper, now that the "certainty of direct Railroad communication with the East was assured."[32]

The railroad intervened more directly in the rapids improvement work in 1856 when the Chicago, Rock Island, and Pacific Rail Road Company Bridge became the first to cross the Mississippi, ending a monopoly of the river by steamboats. Weeks after it opened, the bridge was partially destroyed by a steamboat, which then sank. Major Floyd took a dim view on the bridge: "Indeed it were useless to do any more work there [on the Rock Island Rapids] as long as the bridge remains to obstruct the navigation. I look on that bridge, as now located and constructed, being situated in the narrowest point on the rapids, where the current has the greatest velocity, and the piers at an angle to the current, to be a great obstruction to the navigation of the Rock Island rapids than all the balance of the rapids besides."[33] Floyd had a point. Of the 1,667 boats and log rafts passing the Rock Island Bridge in 1857, 55 collided with the structure.

Meanwhile, work continued through the 1856 season on the Des Moines Rapids, using a new blasting technique involving "galvanism." Major Floyd reported to Colonel Long that he could now "set off a line of blasts of almost any length simultaneously."[34]

The act of August 16, 1856, appropriated an additional $200,000 for work at the Des Moines Rapids, but no further work was done either there or at Rock Island. The impending national crisis and a president opposed to federal civil works served to dry up both interest and appropriations.

THE BEGINNINGS OF PERMANENT IMPROVEMENT

The Democrats who had been in control of Congress from 1840 to 1860 had been suspicious of the federal role in public works and had

been reluctant to make large appropriations, but the Republican party began its career with a platform which favored such expenditures on the basis that they were "authorized by the Constitution and justified by the obligation of the government to protect the lives and property of its citizens."[35] The Civil War had underscored the importance of internal improvements, especially on the Mississippi where such work could help reunite North and South.

Further impetus for improvements came in 1864 when the Mississippi reached the lowest water ever recorded, and even the lightest boats were unable to reach St. Paul.[36] The low water mark of 1864 became the gauge by which all future river levels and improvements were measured. The low water, the war, and the growing steamboat traffic on the Upper Mississippi gave rise to another round of river improvement conventions in the early 1860s which pressured Congress to act.

These pressures and a growing surplus in the United States Treasury brought a response within a year after the war. The act of June 23, 1866, established a four-foot channel as a goal for the entire river above St. Louis and appropriated $200,000 for the Des Moines Rapids and $100,000 for Rock Island. To carry out the improvements authorized by this act, Chief of Engineers A.A. Humphreys appointed Lieutenant Colonel J.N. Macomb as Superintendent of Western Rivers Improvement and placed Major G.K. Warren in charge of improvements from St. Paul to the Rock Island Rapids. On August 3, 1866, General Humphreys ordered Lieutenant Colonel James H. Wilson to Keokuk to superintend the improvement of the two rapids.

Colonel Wilson arrived in Keokuk on August 25. Although there were no engineer districts as such in 1866—appointment was to specific projects rather than districts—this date marks the beginning of permanent improvement work on the Upper Mississippi, and thus the beginning of the Rock Island District Corps of Engineers.

During the fall of 1866, Wilson's assistants completed new surveys of both rapids. Wilson, meanwhile, studied previous surveys and recommendations and listened to suggestions from a number of river men about how to improve the rapids.

The assistant at Rock Island, Captain Peter C. Hains, surveyed the Rock Island Rapids during the fall of 1866, and in December was ready to convene a board of engineers to examine alternative plans. Hains had found that of the fourteen miles of rapids, eleven provided good water. The problem for pilots was knowing where the three bad miles were. As Shreve had recommended in 1836, a thriving business in rapids piloting had grown up, only in private rather than government hands. Le Claire, Iowa, had become the headquarters for the rapids pilots who gathered daily under a famous river landmark, the Green Tree, to be hired on by boats unfamiliar with the rapids.

One option which Hains and his board examined was a system of locks

and dams, but these had always been rejected throughout the nineteenth century because of a principle adopted early in the work that "no plan be adopted for the improvement of navigation in low water that would be prejudicial to its present state in high water.[37] A lateral canal was rejected as too expensive and of no use until the whole project was finished. Excavation seemed the logical choice except for one unknown in the equation.

The chains of rocks in the rapids acted as a series of dams which contained the water in pools behind them. Some river men argued that opening the chains would increase the current and let all the water out, making the rapids more of a problem for navigation. Hains's board made careful calculations and were convinced this would not happen, but no one really knew.[38]

The board recommended that the existing channel be enlarged to 200 feet wide and 4 feet deep, and that excavated material be deposited in the river to check cross currents and confine the water to the main channel. They estimated the cost of such an improvement at just over $800,000.

In June of 1867, a contract for rock excavation was made with Case and Co. of Fulton, New York. That fall the first work began on Duck Creek Chain. Three methods were used to excavate rock at the Rock Island Rapids. By far the most frequent was by the use of coffer dams and the subsequent quarrying of rock. Coffer dams were used where the river was shallow, from six to fourteen feet. These dams consisted of two parallel timber walls eight to ten feet apart, held together with flat iron tie rods. The space between the walls was filled in with puddling—a mixture of clay and gravel pumped from the river bed. Water was then pumped out of the enclosed area, exposing the rock to be quarried. The smallest of the coffer dams enclosed an area of 2.26 acres on Upper Chain; the largest, at Campbell's Island, enclosed 43.07 acres with 5,780 feet of dam.

Quarrying rock was done mostly with hand drills and blasting powder. The broken rock was taken ashore or carried up inclines over the dam wall to flatboats. Coffer dams worked well except for two hazards: the treacherous current on the rapids brought steamboats into frequent contact with the dams, and sudden spells of high water now and then flooded the work area.

When the water was too deep for coffer dams or the bottom of the river too uneven, rock was removed by chisel boat and dredge equipment, but it was hard to do and easy to miss spots. Coffer dams and chisel dredging were supplemented by a small amount of submarine blasting carried on between 1875 and 1880 at the St. Louis and Moline chains.

Work continued on the Rock Island Rapids until 1907, although the project was essentially complete by 1886, when only a few isolated patches remained. By then, the Corps of Engineers had removed 87,826

cubic yards of rock at a cost of $1,166,608.[39]

While Wilson followed the plan recommended by Buford, Shreve, Lee, and Warren at the Rock Island Rapids, his report in January of 1867 departed from most previous reports in recommending a lateral canal at the Des Moines Rapids. In 1866, these rapids were still the most annoying obstacle to navigation on the river. From 1829 to 1866, the government had spent $335,000 on the rapids, but had removed only about 25,000 cubic yards of rock. Colonel Wilson found that during the ninety days of low water in 1866, an average steamboat crossing the rapids spent $500 per day in lost time and wages, in addition to the dollar-per-ton lighter charge, and the cost of labor to load and unload freight between lighter and steamboat. Wilson estimated that the extra labor alone cost steamboats $250,000 during the 1866 season.[40] In addition, by 1866 more than 400,000,000 board feet of white pine lumber was being rafted downriver annually. The Des Moines Rapids alone added 2 percent to the price of this lumber at St. Louis.

Wilson discovered that in addition to the engineers' plans for the rapids, private groups had also made efforts at rapids improvement. In 1837, a charter was granted to a private group for a Des Moines Rapids Railroad which was to run along the Illinois side from Warsaw (opposite Keokuk) to Commerce (later Nauvoo). The company went bankrupt before it could build the road, but the Mormons who came to Nauvoo intended to carry out the project before their leader Joseph Smith was killed in 1844.[41] Smith was planning a larger project as well. He planned to construct a large dam nearly all the way across the Mississippi to Montrose, leaving a small open channel. The dam was to have provided power for industry, and the closure would have backed up the river, giving Nauvoo a deep harbor and a way of collecting tolls from passing boats.

Other private individuals and groups had made attempts to build dams for power or navigation, but they did not last. Only one project came close. On January 15, 1849, Iowa Governor Ansel Briggs approved the Iowa General Assembly's authorization of the Navigation and Hydraulic Company of the Mississippi Rapids to acquire right-of-way for a lateral canal.[42]. The investors in this project were a group of Keokuk residents whose aim was not only to provide transportation around the rapids, but also to generate enough power to make Keokuk the "Lowell [Massachussets] of this Western country."[43]

The chief engineer of the company was Samuel R. Curtis, a 1831 West Point graduate and long time Keokuk resident who had served on frontier duty at Fort Gibson, as a lawyer and engineer on river improvement projects in Ohio, and with the Ohio Militia during the Mexican War. General Curtis, as he came to be known in Keokuk, was a man who dreamed large. As chief engineer appointed by the Iowa General Assembly to improve the Des Moines River, he imagined a

project in which the Des Moines would be connected to the Minnesota River via canal, leading to nationwide trade connections for Iowa gypsum and coal.[44]

The Keokuk group's plan to construct a canal with one 24-foot lock at the foot—a head of water that would generate enough hydroelectricity to operate "all the machinery that human invention can locate within reach of its influence"[45]—ran into money problems and was never started, but the idea of a canal was still strong when Colonel Wilson arrived in 1866, and he faced strong local procanal pressure. His decision to build a canal, therefore, was popular with river interests.

There were several reasons for Wilson's decision. First, the other options posed too many difficulties. He rejected locks and dams for the same reason they had been rejected at Rock Island. Excavating the natural channel would have been expensive, and the surface would not indicate where the channel was (earlier experiments with buoys had proved unsatisfactory). Especially during fog or at night, winds and currents would be likely to push the boat out of the channel. Several local groups brought suggestions to Wilson but the only one he investigated seriously was a proposal to build rock and brush dams partway across the river at each chain to constrict the water flow and form a sluiceway that would increase the water depth and "shoot" steamboats over the rapids. Wilson felt that such dams would not withstand the movement of ice in the spring, although similar wing dams became the dominant form of channel improvement on the Upper Mississippi from 1878 on, and are still in place today.

On the other hand, Wilson felt a lateral canal had many advantages. It would leave the natural channel free both during and after construction, an important consideration for the huge log rafts coming downriver at the rate of three or four a day. Since the canal would be clearly marked, it would be easy to navigate, and its slack water would be a special boon to boats coming upriver against the current. In high water, downstream boats would be able to use the natural channel if they wished.

The canal which Colonel Wilson designed ran along the Iowa shore from Keokuk to Nashville, a distance of 7.6 miles. From Nashville to the Upper Chain the natural channel was deep enough. At the Upper Chain Wilson proposed to cut a channel 200 feet wide, 6 feet deep, and 2,400 feet long. This was two feet deeper than the act of June 23, 1866, called for, but Wilson correctly predicted that within fifty years a deeper channel would be needed. The canal itself was to be 300 feet wide with a 6-foot depth, with a guard lock at the head and two lift locks near the foot. Wilson's estimate of $3,390,000 to build such a canal was close, but his estimate that the work could be completed by 1869 was eight years short.

Colonel Wilson's recommendations were presented to the U.S. House of Representatives in February of 1867, and the Committee on

Commerce made provisions for the canal in the general appropriations bill. The Senate, however, concerned because all previous reports had rejected a canal, removed it from the bill and, instead, appropriated $500,000 for "improving navigation at the Des Moines or lower rapids, according to such plan as the Secretary of War shall, on the report of a board of engineers, approve."[47] Such a board convened in Keokuk in the spring of 1867, and by July had approved a canal identical to Wilson's except for reduced dimensions. Bids were let in September of 1867 and construction got underway.

Wilson and the board decided to build the canal by first constructing an embankment in the water to form the river side of the canal, then excavating the prism between the embankment and shore to obtain a five-foot depth.[48] The embankment was built first because it was the most uncertain part of the construction and, once built, it would serve as protection for the excavation and construction of the locks. In addition, the total of $700,000 now available for the project would just about cover the cost of the embankment.

For the next several years natural and manmade problems plagued construction of the canal. Contractors fell behind schedule, or left, currents washed out portions of the embankment, and land owners on shore fought for needed right-of-way. Still, by 1870 the embankment was finished. It contained a total of 884,325 cubic yards of earth and 97,000 cubic yards of rock. The embankment varied from sixty to ninety feet in width at the bottom, and rose sixteen to forty-seven feet in height.

The guard lock and two lift locks were completed in 1870 and 1874. The lower lift lock was located at Keokuk. The middle lock was two and one-half miles upstream from Keokuk, and the guard lock was a short distance above the middle lock. The locks were constructed of magnesian limestone laid in hydraulic cement. The stone was quarried from the Sonora stone quarries on the Illinois bluffs across the river. The gates were built of cedar and cypress wood which proved to be so sturdy that when they were removed for repairs twenty-five years later, workmen had trouble taking them apart.

Each lock provided a chamber 310 feet long and 80 feet wide at the surface, giving it a usable dimension of 278 by 78 feet—large enough for all Upper Mississippi boats except for the 302-foot *St. Paul*. All of the locks were filled and emptied by gravity through valves in the chamber walls.

When the Des Moines Rapids Canal finally opened to traffic in 1877, it had cost $4,155,000. On the morning of August 22, 1877, the Rock Island District sidewheel snagboat *Montana*, with colors flying, and an audience of spectators who thronged both boat and shore, entered the guard lock at the head of the canal. At five that afternoon, the Keokuk Northern Line steamer *Northwestern* entered the lower lock, passed the *Montana*, went up to the head of the canal and returned.[49]

Present at the opening ceremonies was a new corps employee, Montgomery Meigs, son of Robert E. Lee's assistant in 1837. Major Meigs, as he came to be known by river men, was placed in charge of the canal operations in Keokuk in 1884. Here he quickly established a dry dock and machine shop alongside the canal that was used not only to construct and repair corps boats, but was also rented out to steamboat companies who had nowhere else to go for repairs. Meigs served the Rock Island District for fifty-two years.

TWENTIETH CENTURY IMPROVEMENTS

Steamboating had begun to decline on the Lower Mississippi even before the Civil War, but it maintained a high level on the Upper Mississippi until 1900. Not only did boats get larger, but by 1870 they were using barges to increase their tonnage. Traffic outgrew the four-foot channel authorized by Congress in 1866 long before it was completed. In 1878, Congress authorized a 4½-foot channel, a depth for which the rapids were already prepared. However, by 1900 river traffic was visibly declining except for the short-haul sand and gravel business. Railroads had taken over most of the cargo and passengers, and river interests again pressed Congress for a better channel to handle larger boats and barges. A further push for restoring river transportation came in 1906 when a record grain harvest throughout the Midwest created a shortage of freight cars. Even the railroad magnate James J. Hill asked Congress to improve the waterways.[50] Congress responded on March 2, 1907, authorizing a six-foot channel. Included in the plan were locks at the head and foot of the Rock Island Rapids.

The first of these locks was already under construction before the six-foot channel was authorized. By 1900, a growing farm equipment industry in Moline pointed up the need for better access to the city's waterfront. Moline was especially difficult for upstream boats to reach because they had to cross the steep slopes of the Moline and Duck Creek chains. The River and Harbor Bill of March 3, 1905, authorized a lock at Moline and appropriated $100,000 to begin construction. The project called for dredging a channel 250 feet wide with a 4-foot low water depth from Moline to the head of the Arsenal dike above the city, and a similar channel from Moline to the main channel by means of a lock and dam at the foot of Benham's Island opposite the city. The project was designed to improve three miles of the rapids.

Work on the lock began in April of 1906. The lock chamber was to be 325 by 80 feet. Anticipating the coming six-foot channel, the original depth of five feet was increased one foot in 1906. Previous locks in the United States had all used cut stone construction, but the Rock Island

District had just experimented with poured concrete construction on the Hennepin Canal, and that method was used at the Moline Lock. These two experiments with concrete in the Rock Island District made possible the building of the Panama Canal, and soon changed the entire American construction industry.

The Moline Lock opened for traffic on December 23, 1907. Although it was completed just as a decline of river traffic set in, it did have one year of glory. The lockages in June, July, and August of 1909 (due to heavy use by the Corps of Engineers and a popular Moline-Bettendorf ferry) surpassed the totals for any month at the famous Soo locks, and likely set a record greater than any lock in the world at that time.[51]

Meanwhile, at Keokuk the beginning of the end for the Des Moines Rapids Canal came just after the turn of the century. In 1902, the Keokuk and Hamilton Water Power Company requested permission from Congress to dam the Mississippi River at Keokuk in order to generate electricity. As part of the project, the company proposed to replace the canal and its three locks with a single lock at the dam site. The lock would be turned over to the government to operate with free company electricity.

Such a project would mark a serious shift in direction in river planning since the entire Mississippi below Minneapolis was free of dams. On the other hand, the large lock would fit in nicely with the proposed six-foot channel. In 1902, at the request of Congress, Montgomery Meigs made a survey of the benefits and impediments of such a lock and dam, and reported favorably on the project. Meigs's investigation showed that the dam would slow down boats (15 percent) that bypassed the canal and went directly over the rapids, and it would be a hardship for the log rafts. But rafting was coming to a natural end as the Minnesota and Wisconsin white pine gave out; only one sawmill remained below Keokuk. The dam would benefit the vast majority of river traffic. Meigs estimated that in the previous ten years, a single lock would have saved 12,000 hours over the three locks in the canal.[52] In addition, the pool created by the dam would flood out the entire Des Moines Rapids.

After Rock Island District engineers made small changes in the plans, adding a dry dock alongside the new lock and suitable fishways as might be required by the United State Fish Commission, Congress authorized construction in 1905. Work began in January of 1910 under supervision of both Montgomery Meigs and Hugh Cooper, chief engineer of the power company, and proved to be an excellent example of cooperation between the government and private industry. For three years, the dam grew slowly across the river from the Illinois side while workers on the Iowa side built the lock and dry dock. At its peak, the project employed 1,200 men and used three steam shovels, five derrick cars, thirty dump cars and fifteen locomotives operating over twenty miles of track.

When the final stages of construction reached the Des Moines Rapids

Canal, Rock Island District employees closed the canal for good on October 31, 1912. The lower lock and grounds were then filled in with waste from the new dry dock excavation to the east, and a sea wall was built from this new dry dock across the old canal to the Iowa shore. When work was completed in 1914, the old Des Moines Rapids Canal lock lay under fifty feet of fill.

The last concrete was poured in the dam in May of 1913, and on June 12 the completed lock was turned over to the Corps of Engineers and opened eighteen days ahead of schedule. The first boats in the new lock were the *Sidney* of the Strekfus Line with Captain Strekfus and 405 passengers on board, and the towboat *G.W. Hill*.

As Meigs had predicted, the new lock was a vast improvement over the canal locks. The 90-foot width authorized by Congress had been expanded to 110 feet. The lock was 400 feet long with a 7-foot depth at extreme low water. The lock's lift was forty feet.

While the entire Des Moines Rapids was thus submerged deep beneath Lake Cooper, the name given the thirty-mile pool of water behind the dam in honor of its chief engineer, the Rock Island Rapids continued to pose problems for the six-foot channel. Some improvement of the rapids had been attempted following construction of the Moline Lock, but without success. In 1910, eleven underwater sills were built below Duck Creek Chain in an attempt to hold back the water and increase the depth over the chain, but the increase amounted to only six inches.[53]

Engineers then resurrected an earlier plan first suggested in 1888 to build a lateral canal along the Iowa shore at Le Claire, bypassing the upper 3.6 miles of rapids where the channel was very crooked. Congress authorized the project on March 5, 1914. Plans called for a canal wall or dike parallel to the shore for three and one-half miles, which would give a six-foot depth of water from Le Claire to the Hampton Pool. Part of the canal wall would incorporate Smith's Island, a long narrow strip of land close to the Iowa shore. The lock was designed with a 350 by 80-foot chamber, with a six-foot depth.

World War I interrupted corps activities before construction could begin. Work on the Le Claire Canal did not resume again until 1921. The final dimension of the lock was a more modest 120 by 80 feet, but it did have a seven-foot depth at low water. The project was completed by November of 1922 at a cost of $20,040,632, just over estimate.[54]

THE NINE-FOOT CHANNEL

The final chapter in the story of the rapids of the Upper Mississippi began on July 3, 1930, when Congress authorized the present nine-foot channel. This was a comprehensive plan to construct a series of twenty-

six locks and dams from St. Paul to St. Louis in order to keep Upper Mississippi traffic competitive with that on the Ohio and Illinois rivers, for which nine-foot channels were already under construction. Commercial traffic on the Upper Mississippi had made a comeback in the 1920s after almost disappearing prior to World War I, and the six-foot channel was already inadequate. It was a combination of this need, the need for some major federal works project to combat the Great Depression, and the personal interest of President Hoover which convinced Congress to authorize this radical method of river improvement. The act specified that the locks be not less than the 600 by 110 feet dimensions established on the Ohio and Illinois rivers. Each dam was also to make provisions for an auxiliary lock 269 by 110 feet.

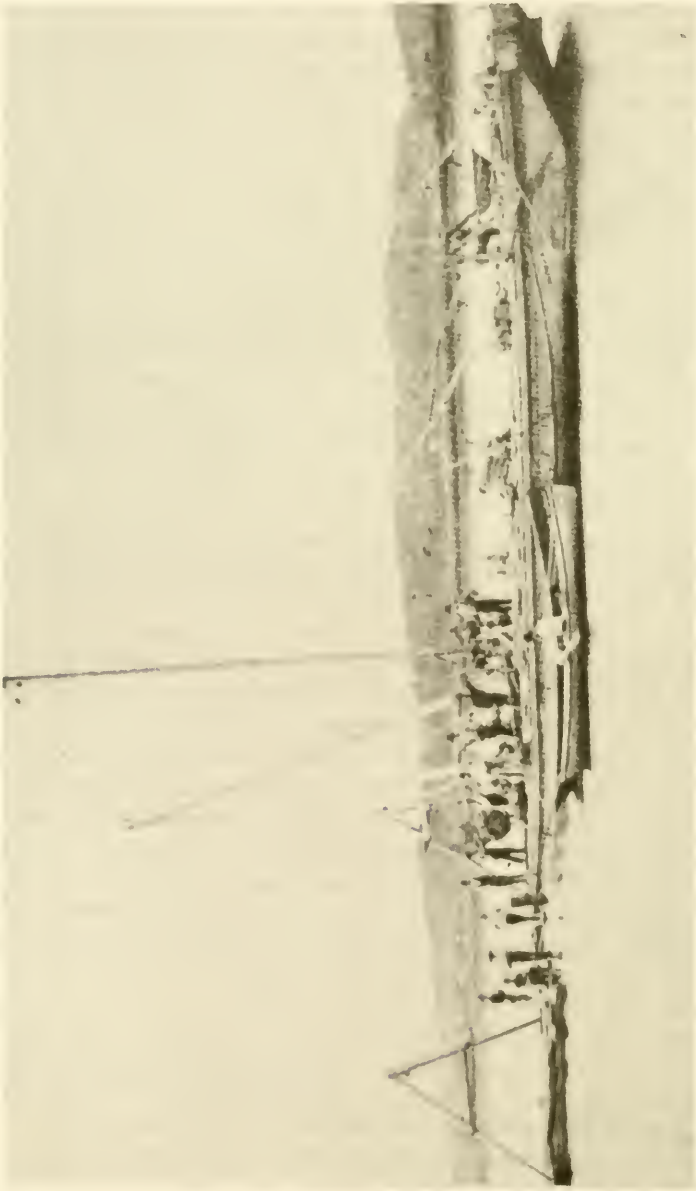
In keeping with the policy of the Corps of Engineers since their first appearance on the Upper Mississippi, the locks and dams were not built in order, but rather, construction began at the worst stretch of river, then proceeded to the next worse, and so on. It was no accident, then, that the first lock and dam to be constructed was Number 15 at the foot of the Rock Island Rapids, running from the downstream tip of Arsenal Island to Davenport. Construction on Lock and Dam 15 began on April 23, 1931. As in all of the construction, the lock was built first so as not to obstruct transportation. The dam was begun only after the locks were operating. Lock 15 was opened to traffic on March 20, 1932; the dam was completed in the spring of 1934. The total cost was $7,800,000.

Because the Le Claire Canal provided good water across the upper portion of the rapids, Lock and Dam 14 at Le Claire was the last to be constructed in the system. It was completed in 1939 at a cost of $5,472,000.

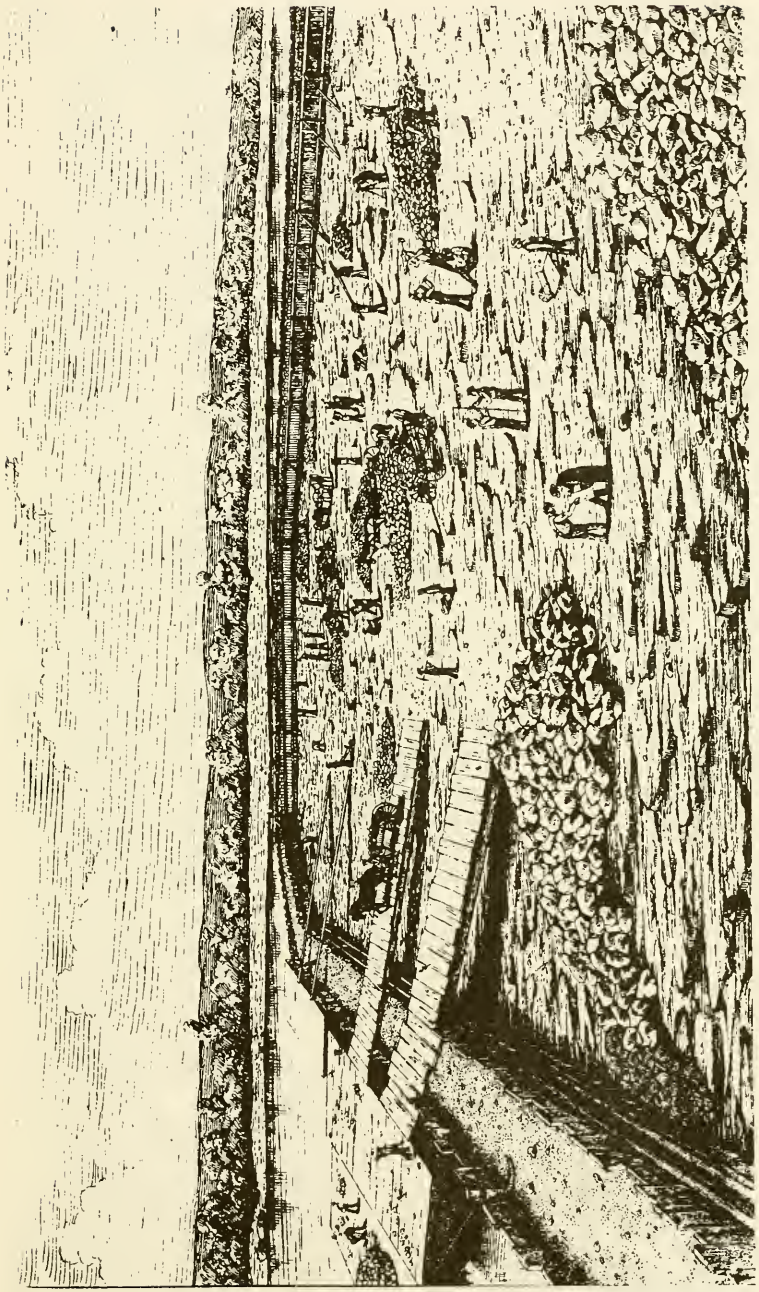
By June 30, 1940, a controlling depth of nine feet was reached from St. Paul to St. Louis, and river traffic immediately began to show the effects. There was now only one bottleneck, the lock at Keokuk. In planning for the nine-foot channel, this lock became Number 19, but it lacked the required depth and it was only 400 feet long. What had been the best stretch of navigation on the Upper Mississippi since 1913 now became the worst obstruction again, as it had been so long ago. The act of July 3, 1930, had authorized a new standard-sized lock at Keokuk, with the existing lock serving as the auxiliary, but difficulties with design and placement, and then World War II, kept this new lock from being built until the 1950s. By then, the dimensions had expanded to 1,200 by 110 feet—twice the length of the other locks in the system. The 38.2-foot drop at Keokuk was by far the largest of any lock on the Upper Mississippi, and the capacity to lock through without breaking up the tow would be especially time-saving. At the 600-foot locks, tows pushing a capacity load of seventeen barges needed to break their tows to lock through.

New Lock 19 was completed in May of 1957. With the completion of that project, the improvement of navigation at the rapids of the Upper

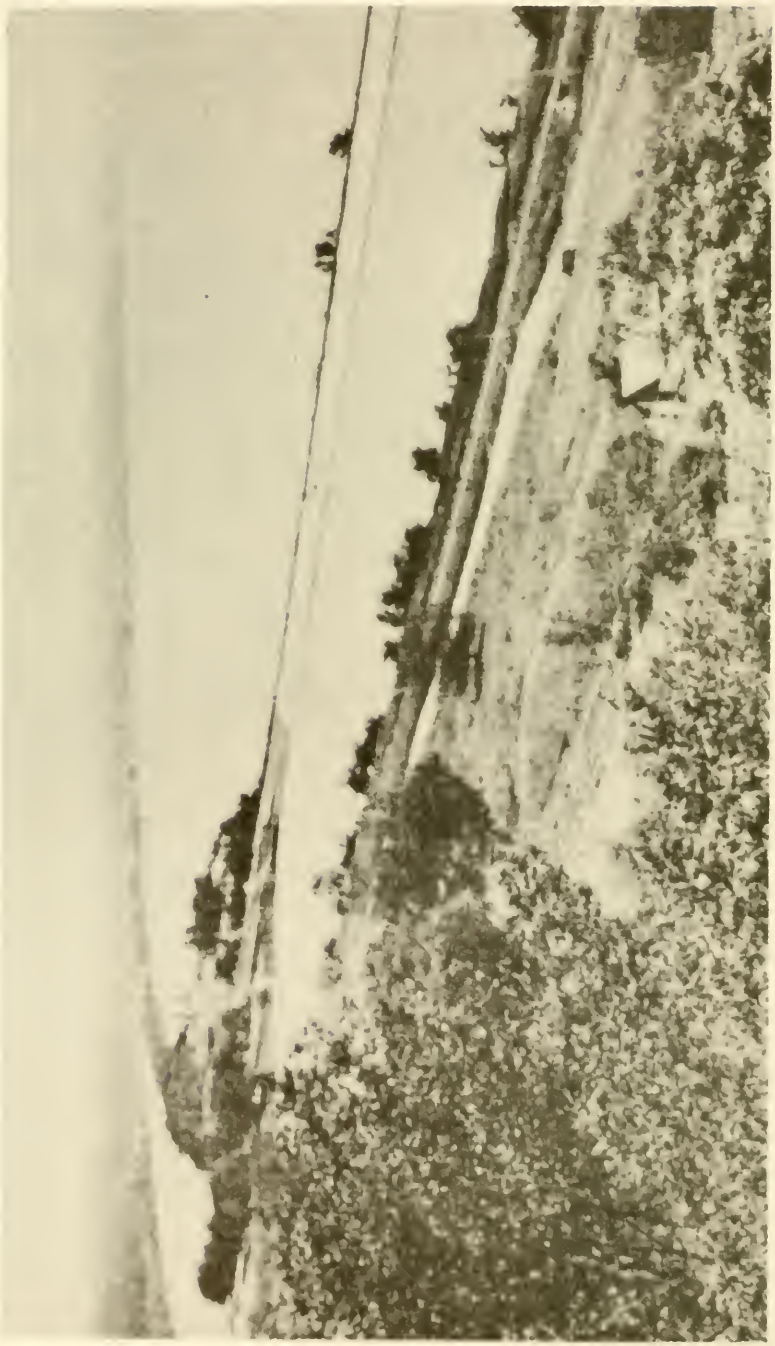
Mississippi is at an end for the foreseeable future. Both rapids lie safely underwater, and the rapids pilots, the lighter, and the wrecked steamboats are only memories of an era when the river was untamed, a real river rather than a chain of twenty-six lakes.



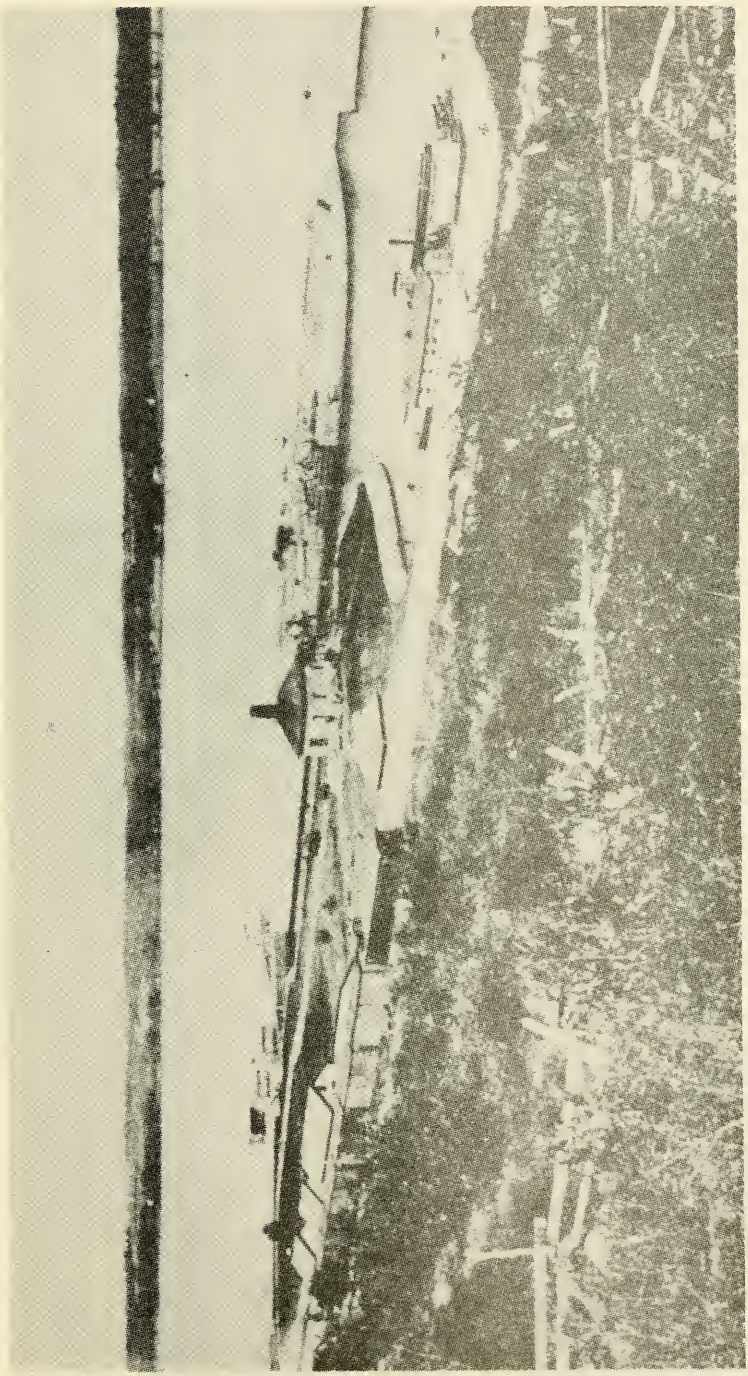
A derrick boat and drilling tripod at the Rock Island Rapids in the 1870s. This equipment for underwater blasting was almost identical to that developed by Captain Robert E. Lee and his assistants as the Des Moines Rapids in 1837-38. Photograph courtesy of the Rock Island District U.S. Army Corps of Engineers.



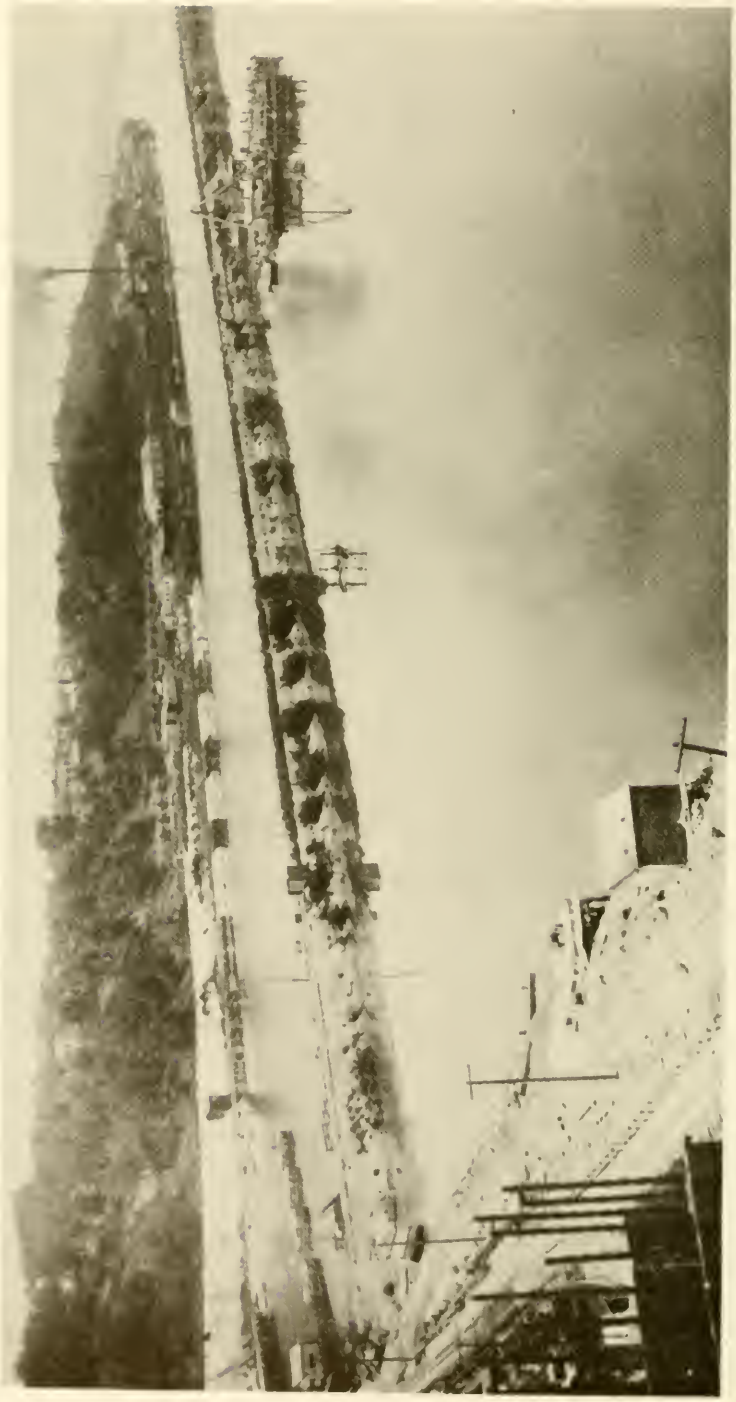
A sketch of a typical coffer dam, the primary method of excavation work on the Rock Island Rapids in the 19th century. The sketch is by Henry Bosse, a draughtsman in the Rock Island District Office in the 1870s.



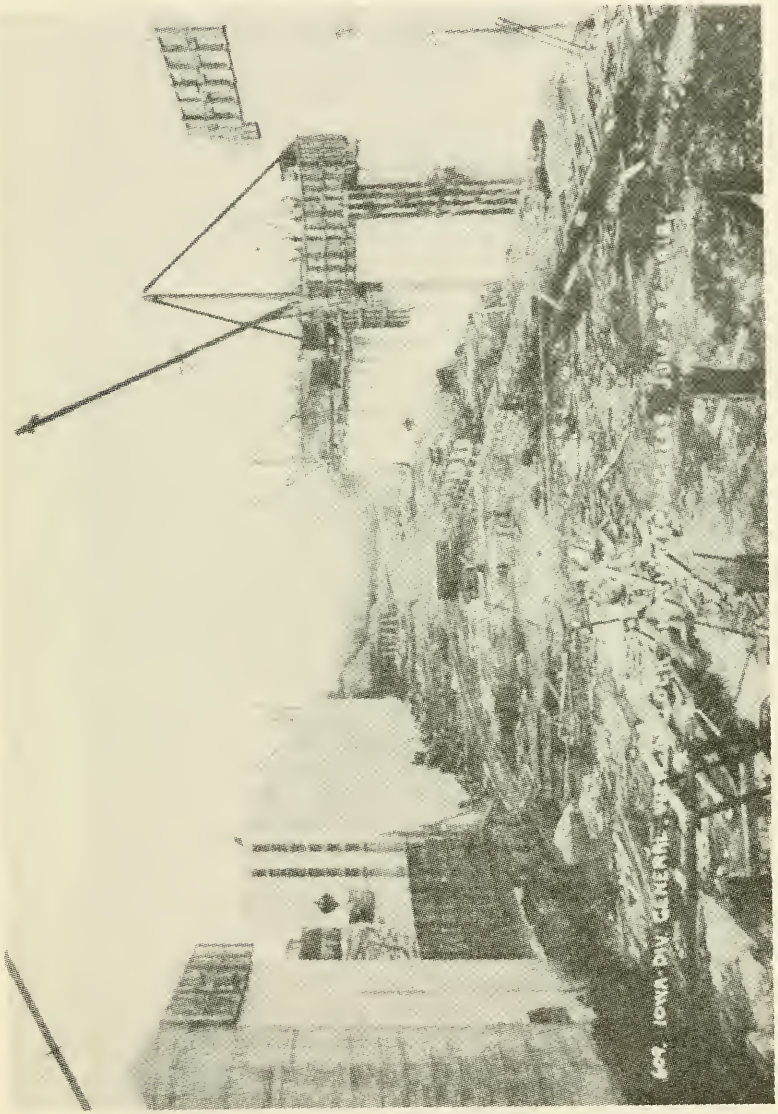
The Middle Lock at the Des Moines Rapids Canal, with a good view of the canal wall.



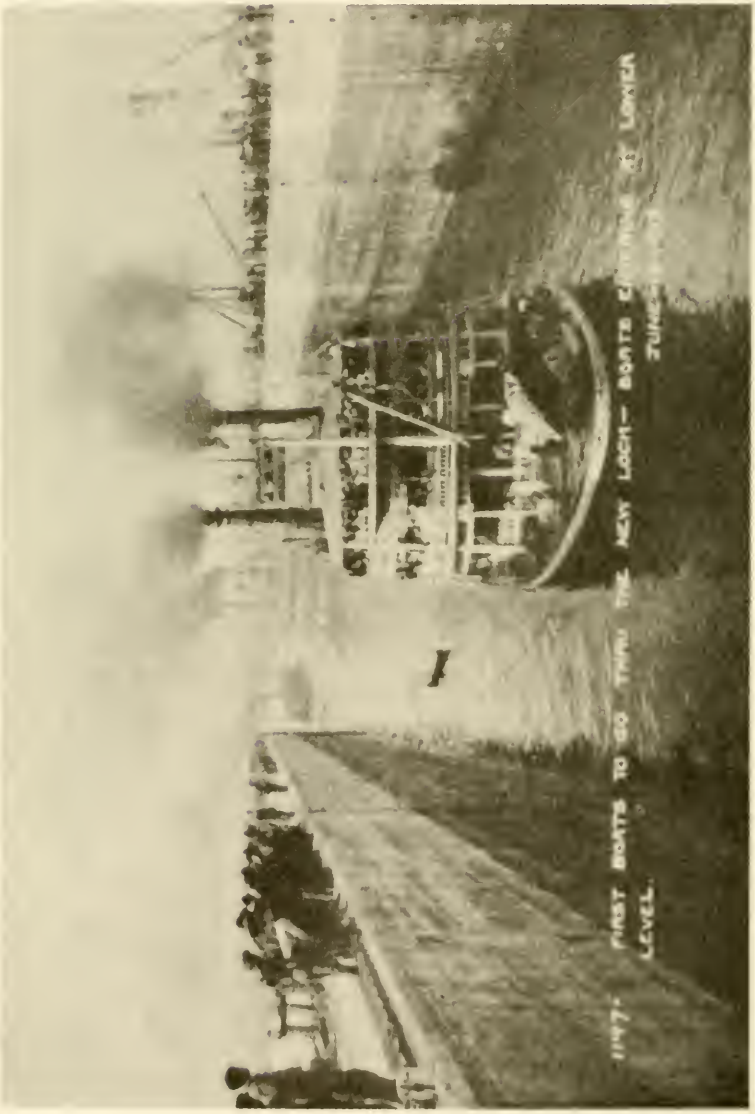
The Guard Lock at the head of the Des Moines Rapids Canal, with a good view of the lock chamber, as well as the lock master's house, and the various machine and storage sheds on the lock grounds.



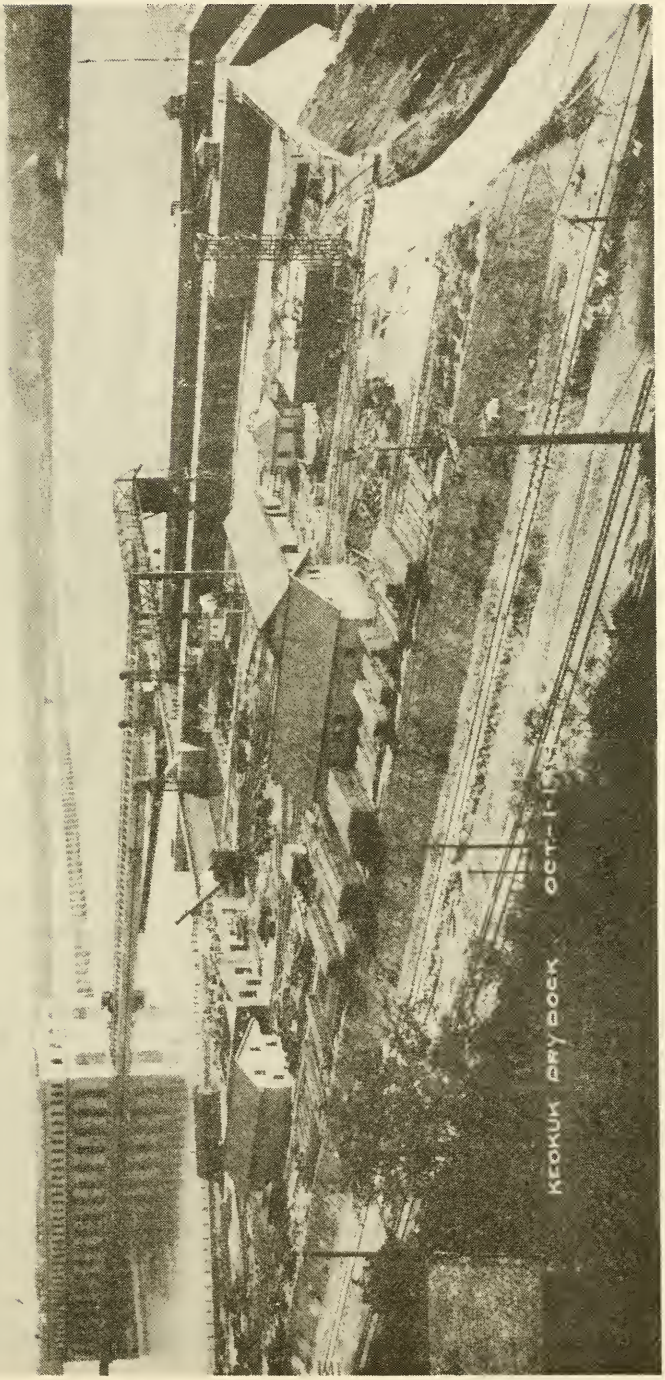
The foot of the Des Moines Rapids Canal as seen from the construction site of the new Keokuk and Hamilton Water Power Company Dam in 1912.



Construction of Old Keokuk Lock, taken in July of 1912.



First boats through Old Keokuk Lock, taken June 10, 1913.



The newly-completed Keokuk and Hamilton Water Power Company Dam. In the immediate foreground is the Keokuk drydock under construction, and behind that, the new lock which replaced the old Des Moines Rapids Canal and its three locks.

NOTES

[1]Colonel Long to Lieutenant G.K. Warren, 1 June 1853, File 338, Record Group 77, National Archives.

[2]William Petersen, *Steamboating on the Upper Mississippi* (Iowa City, Iowa: State Historical Society of Iowa, 1968), p. 78.

[3]Richard G. Wood, *Stephen Harriman Long* (Glendale, California: Arthur H. Clark Co., 1966), pp. 62-65.

[4]Petersen, p. 207.

[5]J.C. Beltrami, *A Pilgrimage in Europe and America*, Vol. I (London: Hunt and Clark, 1828).

[6]Ibid., p. 127.

[7]General Survey Act of 30 April 1824. 4 stat. 22, p. 23.

[8]U.S. Congress, House, *Message from the President of the United States, Transmitting Copies of Surveys Made in Pursuance of Acts of Congress, of 30th April, 1824, and 2d March, 1829*, Executive Document 7, 21st Congress, 1st Session, 1829, p. 7.

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[12]Florence Dorsey, *Master of the Mississippi, Henry Shreve and the Conquest of the Mississippi* (Boston: Houghton, Mifflin Co., 1941), p. 189.

[13]Quoted in Douglas Freeman, *R.E. Lee, a Biography*, Vol. I (New York: Scribner's 1935), p. 143.

[14]Quoted in A.L. Long, *Memoirs of Robert E. Lee* (New York: J.M. Stoddart and Co., 1886), pp. 41-43.

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[17]U.S Congress, House, *Letter from Secretary of War, Transmitting the Inspection of Colonel S.H. Long, and the Report of Lieutenant Warren of his Operations During the Past Year on the Des Moines and Rock Rivert Rapids, in the Mississippi River*, Executive Document 104, 33d Congress, 1st Session, 1854, p. 1

[18]Louis Hunter, *Steamboats on the Western Rivers, an Economic and Technological History* (Cambridge. Harvard University Press, 1949), p. 49.

[19]Ibid , p 631

[20]Mildred Hartsough, *From Canoe to Steel Barge on the Upper Mississippi* (Minneapolis: University of Minnesota Press, 1934), p. 100.

[21]Colonel Long to Lieutenant G.K. Warren, 1 June 1853, File 338, RG 77, NA.

[22]Ibid.

[23]G.K. Warren, "Journal," Warren Papers, New York State Library, Albany, New York.

[24]U.S. Congress, House, *Letter from the Secretary of War, Transmitting the Report of Colonel S.H. Long*, p. 56.

[25]Warren, "Journal."

[26]Ibid.

[27]Ibid.

[28]Ben Hur Wilson, "Over the Rapids," *Palimpsest*, IV (November 1933), 362.

[29]Ibid., p. 363.

[30]U.S. Congress, Senate, *Report of the Secretary of War in Answer to a Resolution of the Senate Relative to the Improvement of the Des Moines and Rock River Rapids*. Report by John G. Floyd, United States Agent. Executive Document 12, 33d Congress, 2d Session, 1854, p. 3.

[31]Ibid.

[32]*Davenport Gazette*, 9 June 1853, p. 2.

[33]U.S. Congress, Senate, *Report of the Secretary of War, Communicating in Compliance with a Resolution of the Senate of December 26, 1856, Information Relative to the Des Moines and Rock River Rapids, and the Harbor at Dubuque, Iowa*, Executive Document 45, 34th Congree, 3d Session, 1857, p. 32.

[34]Ibid.

[35]Isaac Lippincott, "A History of River Improvement," *Journal of Political Economy*, 22 (July, 1914), 632.

[36]*Annual Report of the Chief of Engineers*, 1892, II, p. 1760.

[37]*Annual Report*, 1876, "Report of Captain Peter C. Hains," p. 293.

[38]General Warren is quoted on this point in C.W. Durham, "A History of the Improvement of the Rock Island Rapids, Mississippi River," *Annual Report*, 1886, III, pp. 1429-72. Captain Hains also mentioned the problem in his report in 1867.

[39]*Annual Report*, 1886, II, p. 1428.

[40]U.S. Congress, House, *Report on Brevet Maj. Gen. James H. Wilson, Lieutenant Colonel Thirty-fifth Infantry, on the Survey of the Rock River in the States of Illinois and Wisconsin*, Executive Document 15, 40th Congress, 1st Session, 1867, p. 1.

[41]Donald Enders, "The Des Moines Rapids: A History of Its Adverse Effects on Mississippi River Traffic and Its Use as a Source of Water Power to 1860" (unpublished Master's thesis, Brigham Young University, 1973), p. 62.

[42]Ben Hur Wilson, "The Des Moines Rapids Canal," *Palimpsest*, V, No. 4 (April 1934), 120.

[43]*Keokuk Gate City*, 23 August 1866, p. 4.

[44]Samuel R. Curtis, quoted in Ruth A. Gallaher, *Iowa Journal of History and Politics*, 25 (July, 1927), 335.

[45]Samuel R. Curtis, quoted in Wilson, "The Des Moines Rapids Canal," p. 120.

[46]*Annual Report*, 1867, p. 329.

[47]Ibid., p. 265.

[48]The details of canal construction all come from the *Annual Reports*, 1867-1870.

[49]*Annual Report*, 1878, I, p. 734.

[50]Julius Chambers, *The Mississippi River and Its Wonderful Valley* (New York: Putnam's, 1910), p. 231.

[51]*Annual Report*, 1909, II, p. 1636.

[52]"Report of Mr. Montgomery Meigs, U.S. Civil Engineer," *Annual Report*, 1916, II, p. 1509.

[53]"K" and Rock Island District Headquarters to Colonel Water Fisk, President, Mississippi River Commission, February 4, 1911, Old Rock Island File, RG77, Kansas City Federal Records Office.

[54]*Annual Report*, 1924, I, p. 1090.

[55]Raymond Merritt, *Creativity, Conflict & Controversy, A History of the St. Paul District U.S. Army Corps of Engineers* (Washington: Government Printing Office [1980]), p. 198.

THE ILLINOIS WATERWAY

Vernon F. Barr

The Illinois Waterway, a great connecting link between the Great Lakes and the Mississippi River system, was used for centuries by the Indian and first suggested for development by Marquette, Joliet, and La Salle 300 years ago.[1] The short portage from the Des Plaines River over to the Chicago River was satisfactory for canoes, but La Salle realized that a longer canal, estimated at thirty leagues, would be needed to move commercial traffic around the rocky upper reaches of the Illinois River from Starved Rock to the mouth of the Kankakee River and the lower section of the Des Plaines River.[2]

The War of 1812 focused attention on this waterway's potential as an important transportation link and an 1816 Indian treaty first set aside a strip of land twenty miles wide along a proposed canal route.[3] Admission of Illinois to the Union in 1818 spurred promotional efforts for a canal. State and federal grants followed the apparent early success of the Erie Canal and the removal of the Indian threat to the settlement of northern Illinois after the defeat of Black Hawk in 1832.[4]

The Illinois and Michigan Canal was opened to traffic in 1848 and was an immediate commercial success. The business and cultural connection of the cities in the Illinois River valley were soon transferred to Chicago, New York, and Europe (via the Great Lakes and the Erie Canal) ending almost a century of dependence on down river ties to St. Louis and New Orleans.[5]

The pioneer traffic on the Illinois River started with canoes and increased with rafts, flatboats, and keelboats which were all easily handled on the gently flowing Illinois with its flat gradient, clear water, and sheltered channel.[6] But the appearance of the first steamboats in the 1820s and 1830s provided reliable upstream movement of the larger quantities of freight and numbers of passengers needed to promote the growth of the cities along the shores.[7] A village like Naples became an important river port to serve a large area between Springfield and Quincy and 186 steamboats landed there in 1831.[8]

These steamboats were normally able to operate on the Lower Illinois River up to the La Salle-Peru area and thus connect with the Illinois and Michigan Canal, but lower water problems in late summer and early fall

often denied them sufficient channel depths to carry full loads. The transportation crisis of the Civil War years prompted the state of Illinois to correct this problem by construction of four low-head dams with navigation locks at Henry, Copperas Creek, La Grange, and Kampsville. With federal assistance these were completed between 1867 and 1893 thus serving the greatest years of the packet boat trade.[9]

The Hennepin Canal, promoted as early as 1832 to connect the Illinois and Mississippi rivers, was long delayed by political differences, financial problems, and strong railroad opposition. It was finally started in 1892 and completed in 1907 but was too small and too late to develop much capacity for freight movement and thus had little effect on either river or on transportation in Illinois.[10]

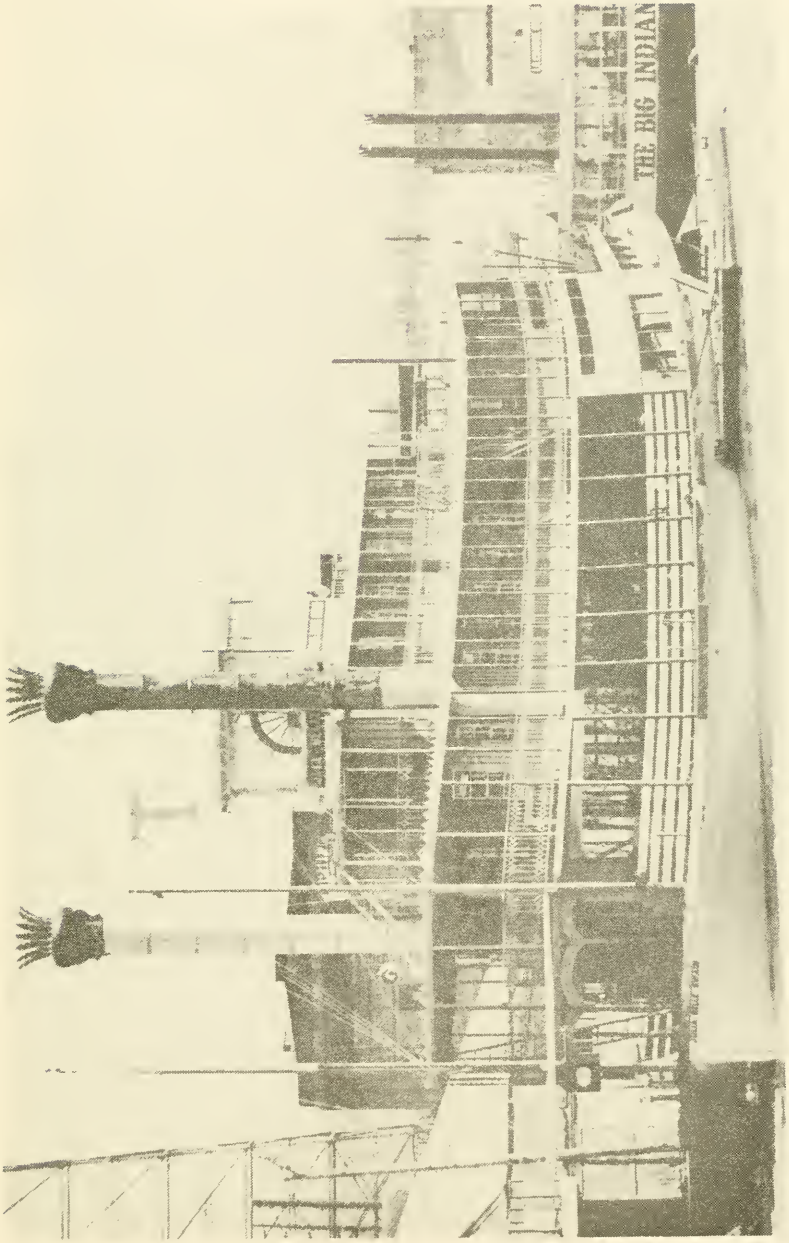
Chicago's rapid growth in the latter half of the 19th century and the pollution to Lake Michigan, the city's water supply, brought about the construction of the Sanitary and Ship Canal in 1900. With a reversed-flowing Chicago River, sewage was sent to Lockport and into the Des Plaines River and on downstream in the Illinois River.[11] This started the Lake Michigan diversion-sewage dumping controversy that still exists today and remains both a problem and a viable partial solution to the management of the Illinois Waterway for a variety of uses.[12]

The new Sanitary and Ship Canal provided sufficient depth for commercial navigation through the sub-continental divide that surrounded Lake Michigan and soon showed the obsolescence of the old Illinois and Michigan Canal for the larger barges and steamboats of the time.[13] Therefore, in 1908 the state of Illinois began to finance the replacement of the Illinois and Michigan Canal's eighteen locks and dams and a complete modernization of the waterway from Lockport to Utica. This project was chronically delayed by Illinois politics, railroad opposition, the start of a system of paved highways, and World War I activities.

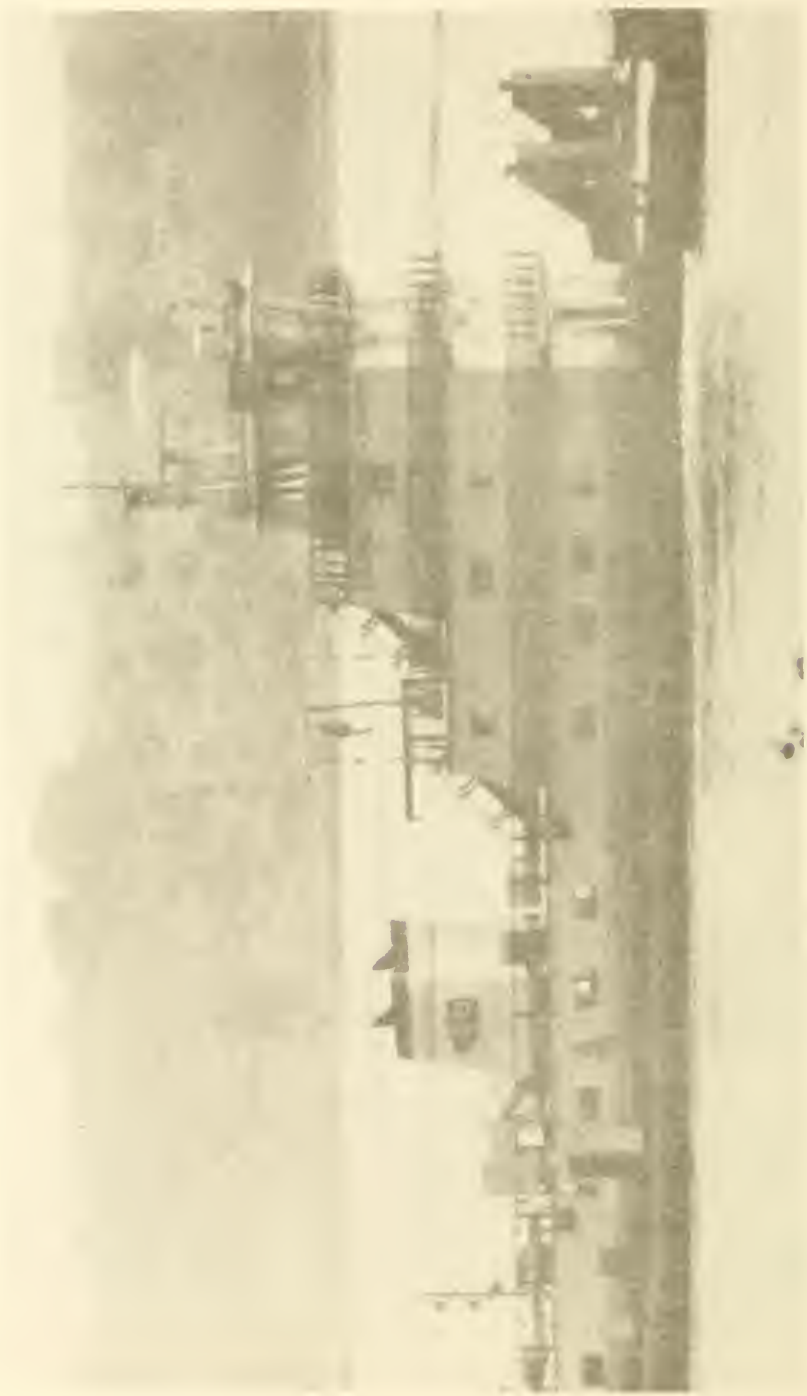
The paralyzing transportation crises of World War I convinced Congress and our national leaders to revitalize the entire inland waterway system for heavy commercialization. Construction to replace the old Illinois and Michigan Canal was started by the state in 1921, turned over to the U.S. Army Corps of Engineers in 1930 for completion, and opened from Utica to Chicago for large towboat traffic in 1933.[14]

This combination of the Chicago River, the Sanitary and Ship Canal, the Des Plaines River, and the Illinois River was officially named the Illinois Waterway, a great (327 miles long) commercial navigation link between the Mississippi River at Grafton and Lake Michigan at Chicago with a freight-carrying capacity that rivalled the Panama Canal.[15]

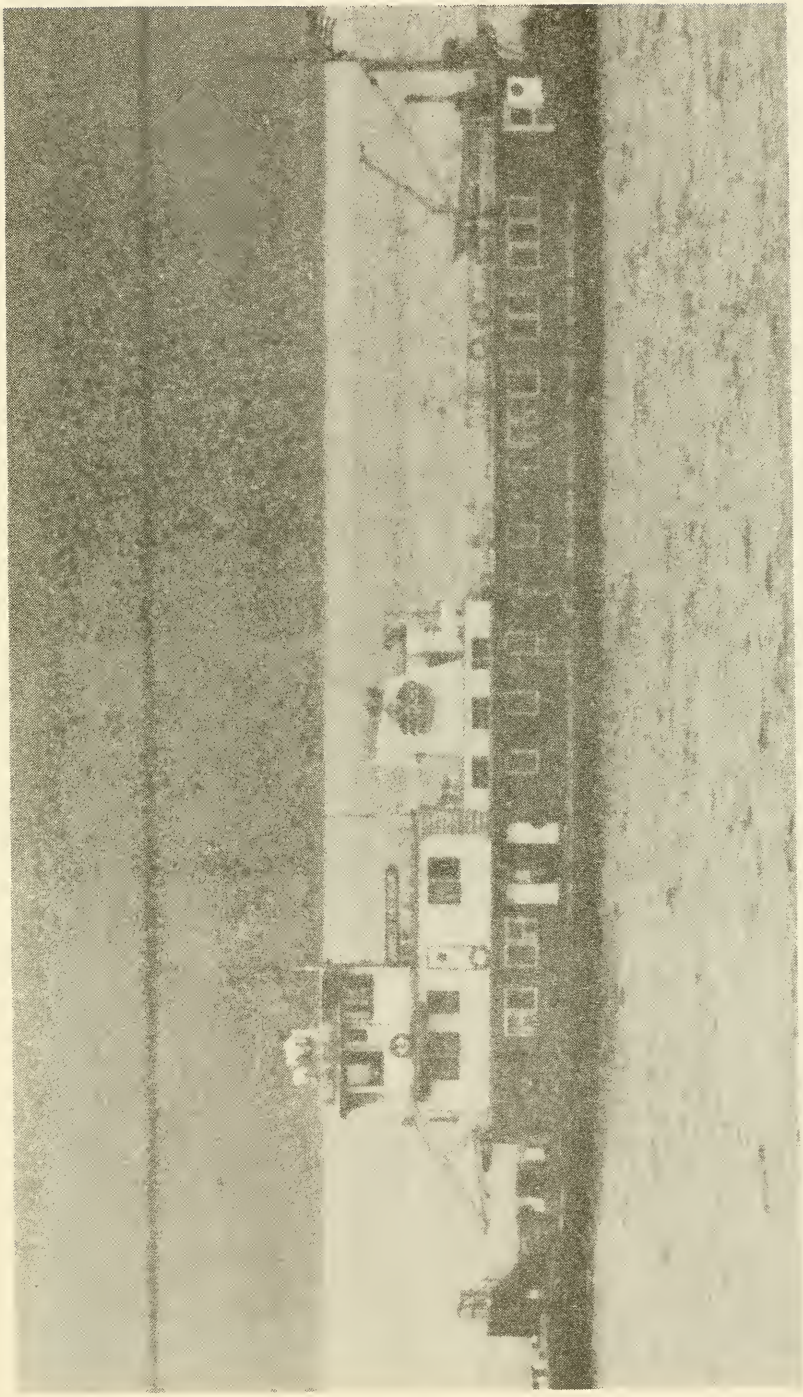
The heavy diversion of Lake Michigan water in the 1920s provided enough channel depth below Utica that the old dams and small locks at Henry, Copperas Creek, La Grange, and Kampsville were unneeded and their removal by the Corps of Engineers was started in 1928. Then a Supreme Court order in 1930 reduced that diversion and the resultant low



Julia Belle Swain. Photograph by Ross Davidson.



Colonel George Lambert, August, 1976



Amoco Missouri, June, 1979.

M.F. Leonard, October, 1979

river stages in the dust bowl years of the 1930s almost stopped commercial navigation and devastated the backwater fish and wildlife habitat.

This problem was corrected with construction by 1939 of two new navigable wicket-type dams with 600-foot locks at Peoria (Creve Coeur) and La Grange. Sufficient channel depth was obtained in the lower reach below La Grange from Lock and Dam 26 at Alton on the Upper Mississippi River.[17]

The great potential of the Illinois Waterway to move huge quantities of bulk commodities at low cost and with a good safety record was finally realized just before the advent of World War II. Many of the barge lines and their operational techniques that had survived the decline of most inland river traffic were working in the coal trade on the Ohio and Lower Mississippi rivers. They were soon demonstrating that a large towboat, then around 2,000 horsepower, could move loads of 20,000 tons or more up and down the Illinois Waterway between St. Louis and the Chicago area on regular schedules.[18]

The insatiable fuel demands of the Chicago industrial complex during the war years were met by the movement of millions of tons of coal and oil up the waterway. Its navigational capacity also helped permit the construction of hundreds of critically needed navy ships at protected inland ship yards such as Seneca and their delivery when completed down to the Gulf of Mexico. Wartime solutions to these commercial navigation problems, including heavy wintertime ice breaking, led the innovative towboat industry to develop a distinctive Illinois Waterway type of pushboat. It featured a heavy hull, towing knees on both bow and stern, and a retractable pilot house for ducking under the numerous low bridges along the Joliet-Chicago reach of the waterway.[19]

The movement of special bulk commodities such as molten sulphur, anhydrous ammonia, petroleum products, molasses, and grain alcohol promoted the development of special barges and complex terminal facilities. Many of the hopper barges (1,500 ton capacity) could be operated open for coal, sand, gravel, and ore or covered for the movement of wheat, corn, or soy beans by the millions of tons down to New Orleans for the world export trade.[20] Some barges were specially designed to be pushed down to the Gulf, then towed by a hawser tug to Tampa with a load of Florida-bound grain, and returned with a load of Florida phosphate fertilizer to the Illinois Waterway terminals for distribution to midwestern farmers.[21]

The major public utility corporations, such as CIPS, Illinois Power, CILCO, and Commonwealth Edison soon realized the advantages of riverside locations for their huge generating plants. These advantages were the low transportation costs of their huge supplies of coal and the available river water for cooling their steam condensers. Combinations of rail-truck and barge terminals such as those at Havana, Liverpool, and

Banner sent millions of tons of Illinois coal north to the various Commonwealth Edison generating plants located on the waterways in the Chicago area.[22]

Major grain dealers such as Peavey, Continental, Dreyfus Burche, and Farmers Coops built riverside elevators by the dozens to receive millions of tons of Illinois corn and soy beans by trucks. The grain was then transferred to covered barges for delivery down river to the world export ships at the Lower Mississippi River terminals from Baton Rouge to the Gulf of Mexico.[23]

Large oil companies such as Standard Oil, Mobil, and Shell, and the petrochemical corporations soon determined that the towboat-barge movement of their materials was almost as safe and efficient as pipe lines and today their huge tank farms are prominent features along the waterway, especially in the Pekin-Peoria and Chicago industrial areas.[24] A good example of such utilization is the movement of gas and oil by Standard Oil from their refinery at Hartford to their terminals at Quincy and the Quad Cities on the Upper Mississippi River and to Peoria on the Illinois Waterway. Using one towboat, the *Amoco Missouri,* and two sets of tank barges, they routinely fill these terminal tanks with millions of barrels of fuel, also going up the Missouri River to Jefferson City and down the Mississippi to Cape Girardeau on similar voyages.[25]

The completion in the 1960s of the Cal-Sag Canal connecting the Illinois Waterway to Lake Calumet Harbor, south of Chicago, provided a better connection to Lake Michigan and ocean-going ships arriving via the Great Lakes and the St. Lawrence Seaway.[26]

The entire history of the improvements along the Illinois Waterway has been a classic example of congressional wisdom in financing (and partially subsidizing) major transportation projects that offer widespread benefits to the public. In addition to the construction of locks and dams, Congress created a government agency, the Inland Waterway Corporation, and its subsidary, the Federal Barge Line to acquire and operate towboats, barges, and terminals to demonstrate the values of waterway transportation and thus stimulate investment by the private sector. Later, these government operations were sold to private barge line corporations.[27]

The annual tonnage on the waterway increased from 1.7 million tons in 1935 to 45 million tons by the late 1970s.[28] The riverside industries and the highly resourceful barge lines and ship yards combined to improve efficiency and provide very reliable transportation, at costs as low as three mills a ton-mile, with an outstanding safety record and very little interference with the routine public activities of our society.[29]

The operation of tows 1,200-foot long, 105-foot wide, carrying 23,000 tons at a 9-foot draft, pushed by towboats of 5,000 horsepower, aided by bow steering units, radar, sonar, and modern communication equipment, is now routine along the waterway.[30] With the completion of

the new Lock 26 at Alton in the next few years, there will probably be a two or three month period every spring when water flow will be sufficient that the wickets can be kept down at the Peoria and La Grange dams and ocean freighters 1,200-foot long could come up the Mississippi River and the Illinois Waterway to Peoria on to the La Salle-Peru area to haul special commodities or huge equipment between local terminals and the ocean ports of the world.[31]

The future of the Illinois Waterway is assured as a great transportation artery if its operation and maintenance are left to the Corps of Engineers and adequate funding is provided by Congress. The growth of recreational activities, the energetic environmental movement of the last two decades, flood control problems, water supply and sewage disposal, and fish and wildlife habitats must all be considered in any future improvements. The Corps of Engineers, which is probably the greatest public works agency in the history of our civilization, is capable of balancing all these factors along the waterway in the years to come.

NOTES

[1]James Gray, *The Illinois* (New York: Farrar and Rinehart, Inc., 1940), p. 23.

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[3]Robert P. Howard, *Illinois: A History of the Prairie State* (Grand Rapids: William B. Eardmans Publishing Company, 1972), p. 193.

[4]Ibid., p. 238.

[5]Illinois Department of Conservation, Division of Waterways, *Report for Recreational Development of Illinois River Backwater Areas* (1969), pp. 14-15; *Illinois: A Descriptive and Historical Guide, American Guide Series* (Chicago: A.C. McClurg & Co., 1939), p. 61.

[6]Gray, p. 114.

[7]*Report for Recreational Development of Illinois River Backwater Areas,* pp. 12-13.

[8]*Illinois: A Descriptive and Historical Guide,* p. 60.

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[10]Roald D. Tweet, *A History of the Rock Island District U.S. Army Corps of Engineers, 1866-1983* (Washington: U.S. Government Printing Office, 1984), pp. 150-51; Leslie C. Swanson, *Canals of Mid-America* (Moline, Illinois, 1964), p. 38.

[11]U.S. Army Corps of Engineers, *Water Resources Development in Illinois* (1977), p. 82.

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[15]*Water Resources Development in Illinois*, pp. 82-87.

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[17]*Those Army Engineers. . . .*, pp. 185-232.

[18]Files of *The Waterway Journal*, St. Louis, Missouri.

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[20]*Those Army Engineers. . . .*, p. 225.

[21]Files of *The Waterway Journal.*

[22]U.S. Army Corps of Engineers, *Charts of the Illinois Waterway from the Mississippi River to Lake Michigan* (1974).

[23]Ibid.

[24]Ibid.

[25]Files of *The Waterway Journal.*

[26]*Illinois Waterway. . .*

[27]Files of *The Waterway Journal.*

[28]*Those Army Engineers. . . .*, p. 230

[29]Files of *The Waterway Journal.*

[30]Ibid.

[31] *Plan of Study for Increased Lake Michigan Diversion at Chicago, Illinois*, p. 5.

NOTES AND DOCUMENTS

Editor's Note

"Waterways in Western Illinois" is the second in a series of *Western Illinois Regional Studies* special issues. In conjunction with the six articles that are featured in this issue, it is appropriate to briefly summarize a sequence of events about a particular western Illinois waterway, the Hennepin Canal.

In January, 1984, Congressman Lane Evans established a citizens' task force to recommend how the Hennepin Canal could be developed to realize its considerable recreational and historical potential for the people of Illinois. The volunteer group was made up of individuals representing recreation, environmental and historical preservation, tourism, economic development, agriculture, business, and labor.

The first task force meeting was held on February 18: three additional meetings were held on March 10, April 8, and May 21. During this phase of task force study, members discussed canal rehabilitation strategies, federal funding possibilities, and legislation to designate the waterway as a National Heritage Corridor. They also heard presentations from representatives of the U.S. Army Corps of Engineers and the Illinois Department of Conservation. The second phase of task force study featured public hearings to receive testimony on the future of the Hennepin Canal at Milan on June 22 and at Princeton on June 29.

The final task force meeting was held on August 11 at which time the members approved several recommendations to Congressman Evans concerning the Hennepin Canal's future. Those recommendations called for canal rehabilitation to follow the state's Hennepin Canal State Trail Master Management Plan; a $15 million Hennepin Canal rehabilitation authorization in the 1984 Omnibus Water Resources Act be designated directly to the U.S. Army Corps of Engineers; and, federal legislation be introduced to designate the Hennepin Canal as a National Heritage Corridor. On October 2, Congressman Evans introduced the legislation.

Also recommended was the use of Youth Conservation Corps workers

to help clear and restore the canal's banks and right-of-way; promotion of the Hennepin Canal's qualities as a prime recreational vacation area for visitors to the 1992 Chicago World's Fair; and, the sponsoring of a local citizens' group to continue the work of the task force.

Copies of task force meeting minutes, an interim report, a report on the two public hearings, the final report with recommendations, a *History of the Hennepin Canal*, and the heritage corridor legislation are on file at the Archives and Special Collections unit of Western Illinois University Library.

Donald W. Griffin

REVIEWS OF BOOKS

EVER THE WINDS OF CHANCE. By Carl Sandburg, with an introduction by Margaret Sandburg and George Hendrick. Urbana and Chicago: University of Illinois Press, 1983. Pp. 163. $12.95.

Carl Sandburg's autobiography, *Always the Young Strangers*, is one of the fullest and most vivid accounts of growing up in America that has been offered by a notable writer. As an autobiographer, his memory was prodigious, and in writing this account of his early life he took the same kind of pains to recover and verify facts that had served him to such advantage in his enormously successful biography of Lincoln. He filled its pages with colorful re-creations and descriptions of life in his hometown, Galesburg, Illinois, during the last two decades of the nineteenth century—the people, their language and attitudes, the events of the day, both mundane and momentous, the geography of the town, life in the streets, the character of the houses and public buildings, all of which are rendered in animated detail. Never was a small midwestern town so fortunate as Galesburg in sitting for its portrait, for in addition to this book of Sandburg's, it had also been the subject of Ernest Elmo Calkins' *They Broke the Prairie*, a work still listed as a model of local history by the *Harvard Guide to American History*.

But *Always the Young Stranger*, partly because Sandburg had been at such pains not just to record his impressions but to re-create the total milieu in which he had grown up, covers only the first twenty years of his life. The story was to be carried forward in a sequel, *Ever the Winds of Chance*, which he began but never completed, and it is this uncompleted manuscript which has now been edited for publication by the poet's daughter, Margaret Sandburg, and Prof. George Hendrick of the University of Illinois. These editors have served their author well. They have provided a brief but informative introduction, attractive illustrations, and an index, but they have presented the text unencumbered and in the relatively unrevised state in which the author left it. This means that the narrative is not nearly so polished and full as it would have been had

Sandburg completed it, but fragments and unfinished works have uses of their own, and this manuscript is far too valuable to have gone unpublished.

In fact, it might well be argued that as an indicator of how Sandburg developed as a writer, *Ever the Winds of Chance* is more an important source than *Always the Young Strangers*, though the one is a fragment and the other has been called a classic. For the unfinished work takes up the story at a critical juncture in the young writer's life, his unforeseen opportunity to enter Lombard College. With only an eighth-grade education, Sandburg could not have been admitted to most colleges, even if he had had the money to go, which he did not. Lombard, a small and struggling school in Sandburg's own Galesburg neighborhood, simply waived the academic and financial impediments and made it possible for him to enroll, essentially because the people in charge thought him a worthy young man. And so, though he spent two years in mostly preparatory studies and never completed the requirements for a bachelor's degree, Sandburg was able for four years to take brilliant advantage of the intellectual and social conditioning that constitutes a college education.

How much he owed to his experience at Lombard College, and how fully aware Sandburg was of its profound influence, are what make *Ever the Winds of Chance* so valuable. For modest as its reputation and physical resources were, Lombard did well by students like Sandburg who were motivated and eager to learn. His teachers for the most part seem to have been learned and able, if somewhat grave, and one of them was an exceptionally talented man, whose impact on Sandburg was deep and lasting. This was Philip Green Wright, the grandson of Elizur Wright, the anti-slavery editor and insurance reformer. Wright taught a panoply of courses at Lombard, including mathematics, astronomy, and English composition. This was typical in the small colleges of that day, but Wright was not a typical man; he was unusually gifted in a wide range of endeavors, and when he eventually left Lombard, he became a noted government economist. But it is as the teacher of Carl Sandburg that Wright is best remembered.

Ever the Winds of Chance describes in considerable detail Sandburg's college life, which was as unusual as it was indicative. To begin with, he seems to have spent most of his college career while on duty as a fireman. His arrangment with the Galesburg Fire Department apparently permitted him to sleep in the firehouse, perform a few hours of routine duties, and then be away from the department for the rest of the day to attend classes, subject only to his appearance for duty whenever the fire alarm was sounded. And this was only one of an astonishing number of odd jobs that Sandburg hustled for himself to meet expenses and compensate his family for his keep. He dressed chickens and turkeys, stoked fires and hauled ashes, cleaned stalls and curried horses, sold

celluloid collars, picked apples, and covered Lombard events for the *Galesburg Evening Mail.*

Perhaps one of the most interesting and significant things one learns about the young Sandburg in this book is capacity for work and his ability to see his experiences in a positive light. For Sandburg never seems to have considered himself as anything but fortunate, even though his personal circumstances—his poverty, his limited education, his lack of social status as the son of an immigrant laborer—might have seemed to others in the same situation as discouraging liabilities. He understood necessity as opportunity, and he learned from everything he did. His career as ringer of the college bell might stand as what Kenneth Burke would call a representative anecdote in this regard. To earn his tuition one of his chores was to ring the bell that signaled the end of one class period and the beginning of the next. During the interval, while his fellow students passed to their classes, Sandburg was alone in the bell tower, but he took advantage of his time by poring over the discarded books that were stored there.

Many of the glimpses that we get of the future poet and popular spokesman in *Ever the Winds of Chance* are instructive. He wins an oratorical contest with "A Man With Ideals," a speech on John Ruskin, for whom he had great admiration. He becomes a member of the Erosophian Society, in which the students "debated the tariff, imperialism, the Boer War, whether a 'society of nations' could bring an end to war between nations, whether the United States should annex the Phillipines." He walks across town to Knox College to listen to visiting lecturers such as Booker T. Washington, Elbert Hubbard, and Jacob Riis, the reforming journalist whose book, *How the Other Half Lives*, made a great impression on him. Downtown, at the public auditorium, he hears Eugene V. Debs, whose politics and person would play an important role in his later life. He is invited by the president to become a founding editor of Lombard's yearbook, *The Cannibal.* And when he was elected business manager of the *Lombard Review*, we catch a glimpse of him as he appeared to his fellow students: "Mr. Sandburg, the business manager, though lacking in experience, is a man of indomitable will and an insatiable desire to succeed, which will, doubtless carry him over every difficulty."

Sandburg was not unaware of what his audience would want to know about the literary education of a writer, and he doesn't disappoint, listing at some length of the writers he read in his courses and those for whom he had a special affinity. That his assigned reading was heavily Victorian, is to be expected, but among his favorites there are some surprises. One is the essays of Charles Lamb, which lasted a lifetime. His early attachment to the poetry of Stephen Crane and Emily Dickinson could hardly have come through his textbooks, and probably came by way of the very important out-of-class contact he had with Philip Green

Wright. This was almost certainly true of his enduring passion for Whitman. Though Sandburg devotes a chapter to his early interest in Elbert Hubbard's magazine, *The Phillistine*, and credits him with introducing him to Emerson, Thoreau, Jefferson, Franklin, and Tolstoy, he tries to downplay the importance of this largely forgotten essayist by saying "Hubbard was never a hero to me but more like a good companion." But it seems clear that Sandburg's development as a writer owed a great deal to the combination of idealism, iconoclasm, free-thinking and humor that he found in the pages of *The Phillistine*. Probably of equal importance with his reading in his literary education is his good fortune in coming under the tutelage of Wright, who invited students with literary aspirations into his home and encouraged them in their writing. On his own printing press, he set the type for Sandburg's first collection of poems and thus became the first publisher of one of America's most popular poets.

In addition to fifteen chapters on the Lombard College years, *Ever the Winds of Chance* contains three chapters on Sandburg's experiences after leaving college. Working first as a travelling salesman of stereographic "views," then as a literary fireman, he finally takes what he calls the "Chicago Plunge," and works on a series of magazines. The narrative ends at the point where he abandons journalism for politics and becomes a labor organizer in Wisconsin. The editors, in their introduction, offer possible reasons why Sandburg dropped his autobiography and never returned to it, these reasons having to do with his health and activities in 1955 and after. But it can hardly be a coincidence that the narrative ends at precisely the time that he met Lillian Steichen, the beautiful and gifted woman who was to be his wife and a dominant force in his life for nearly sixty years. At that point, it becomes not simply his story but theirs, and one can't help but think that this was, for Sandburg, a different matter. *Ever the Winds of Chance* is a welcome addition to the Sandburg canon, unfinished and unrevised though it may be. It touches and illuminates a crucial time in the development of a memorable American writer.

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WESTERN ILLINOIS HERITAGE. By John E. Hallwas. Macomb, Illinois: Illinois Heritage Press, 1983. Pp. xiii + 203. $8.95.

John E. Hallwas has been at the forefront of research into the history of the vaguely defined region known as western Illinois for several years and his expertise is known to all interested in the subject. Moreover, as

Professor of English and Director of Regional Collections at Western Illinois University, Hallwas has been one of the chief promoters of studies into the region's past. As a result, any publication by Hallwas concerning the history of western Illinois is an event of no small import. I approached my assignment to review *Western Illinois Heritage*, therefore, with high expectations. I was not disappointed, for Hallwas has produced not only an important but also a generally satisfying book. Certainly, this is a publication that will serve as a pivotal point in the largely unexplored history of the region.

Western Illinois Heritage is neither a textbook nor a detailed scholarly analysis. It is, instead, a popular introduction to the subject that will prove enlightening to both the historian and the lay reader. The text has been organized into fourteen major sections, each one dealing with a common theme. Hallwas has then arranged several short articles within these sections chronologically. Most of the material contained in this volume are reprints of essays by the author that have appeared in numerous publications ranging from popular magazines to newspaper to historical and literary journals.

Early in his introduction Hallwas grapples with a definition for western Illinois. All too often, he notes, individuals have divided the state into two areas, each deriving its culture from different sources, Chicago and its outlying urban areas and everything else. This division, so common for those unacquainted with the people and the culture of the state, is ridiculous. But just where are the boundaries of western Illinois? The Mississippi River is, of course, the western border. Or is it? Is perhaps the eastern part of Iowa as much a part of the region as the land and people on the other bank? Certainly one would think so and Hallwas is not wedded to the river as a solid barrier, for he discusses events on both sides of the river in several instances, notably in relation to the land transactions of Dr. Issac Galland with the Mormons and concerning several incidents in Keokuk. What about the northern, eastern, and southern regional borders? The author concludes that they are even more vague, but generally contends that an arc running from Rock Island and Moline through Peoria and on to Springfield encompass the region that he calls western Illinois.

As part of the fourteen major sections in *Western Illinois Heritage* Hallwas discusses the regional impact of the Native Americans, both those that lived anciently and the more modern Sauk and Fox; the towering individuals of the region's frontier period such as John Shaw and Peter Cartwright; and the settlement process on the Illinois frontier focusing largely upon such spectacular incidents as cholera epidemics. The author also presents interesting material about the preachers and religious stalwarts of the area; the utopian groups such as the Mormons at Nauvoo, the Swedish colony at Bishop Hill, and the Icarians; the temperance movement; and the antislavery crusaders. Hallwas also comments on the

major political figures of the region during the mid-nineteenth century, although he excludes Abraham Lincoln because information about him is voluminous. There are other sections dealing with the role of the region in the Civil War; the problems of frontier law enforcement for offenses ranging from swindle to murder; and the area's contribution to American literature, especially in relation to the towering poets of the region, Vachel Lindsey, Edgar Lee Master, and Carl Sandburg.

Finally, Hallwas concludes with perhaps the most valuable essays of the volume. In a striking set of articles under the general title of "Developing a Sense of Place," the author demonstrates with vivid prose and ringing phrases the regional character of western Illinois. In this section Hallwas returns to some of the themes suggested in his introduction; the nature and character of the region, the regional mentality, and the definition of the phenomena known as western Illinois. In the five articles contained in this section, the author analyses the development of cultural myths, the birth and death of a community that might have been as great as any in the region had not certain factors caused its premature demise, and the role of community cemetaries in understanding western Illinois.

More than this, however, Hallwas presents in his final essay, "A Sense of Place in Western Illinois," an article adapted from an address made in 1979 to the Western Illinois Regional Studies Conference, the mature statement that ties together the rest of the disparate articles contained in the book. He asserts that the people that inhabited western Illinois in years past often felt a deep identification with their local area. Perhaps the great Sauk and Fox Chief, Black Hawk, expressed it best when he wrote: "It was here that I was born—and here lie the bones of many friends and relations. For this spot, I felt a sacred reverence." (p. 201) Other residents have made similar admissions, drawing deep satisfaction from having been a part of western Illinois. Hallwas contends that it is the responsibility of all those interested in the history of western Illinois to accent the region's distinctiveness and to express publicly its "unique significance in the kaleidoscope of American culture." (p. 202) His final comments raise a clarion call for the celebration of the region's past. He asserts that "The responsibility for developing an awareness of our region's cultural heritage resides with all of us who feel that life in this area is unique and significant. We, who live here, must affirm the value of western Illinois." (p. 203) In essence, this is the goal and accomplishment of the Hallwas book. *Western Illinois Heritage*, all other factors aside, is a celebration of the uniqueness and significance of the region in America's past. As such, it is a satisfying and refreshing book.

Although a most welcome and valuable addition to the literature of the region, no book is flawless and certain nuisances are apparent in this volume. First, the lack of references anywhere in the book will probably prove a bit unnerving to professional historians. Although this omission is

perfectly understandable because of the nature of the relatively short, previously published articles and the author's appeal to the popular audience, *Western Illinois Heritage* might have been made more useful with the addition of some type of documentation. Second, even in seeking to maintain a popular approach to the subject, Hallwas could have included a brief bibliographical essay pointing the direction toward useful sources of further reading. Third, certain difficulties of organization in the book were readily apparent. For instance, contained within a section dealing with characters from the region's frontier period there was an article concerning Peter Cartright, while Hallwas devotes another entire section to religion and religious revivals in western Illinois. Should not the information on Cartright have been placed in the latter section? As another example, the author devotes almost an entire section to various aspects of the Latter-Day Saint experience in Nauvoo, yet far removed from this section, in another dealing with shady business practices in frontier Illinois he includes a short article on Dr. Galland's unique land dealings with the Mormons. A few differences in the organization of the publication might have increased its usefulness. Finally, this volume would have benefitted from the inclusion of an index.

In spite of these relatively minor deficiencies, *Western Illinois Heritage* is an enjoyable book, one that captures the essence of the region in its uniqueness and vitality and presents a vibrant picture of life there for the period prior to the twentieth century. It should be read by all interested in the subject for its broadness of presentation, its delightful storytelling, its wry humor, and its rare sensitivity.

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SUSAN GLASPELL: VOICE FROM THE HEARTLAND. By Marcia Noe. Western Illinois Monograph Series, Number 1. Macomb: Western Illinois University, 1983. Pp. 97. $3.95.

Somewhat metaphorically, Susan Glaspell in 1932 characterizes American writing as compared to English literary production in the first quarter of the twentieth century: "The thing coming out of nowhere that may build up a new literature." At the same time, this statement aptly characterizes Glaspell's own development as a writer within the scope of roughly thirty years, from local-interest storyteller to experimental dramatist, novelist, and Pulitzer award winner. Marcia Noe has compiled this life of an American woman writer of the "second string" into a biography which bears witness to the fact that the richness of a literary biography will often result from an inner dichotomy: while externally there

is little of the extraordinary in the subsequent stations of the writer's life, her literary products are evidence of internal struggles, frictions, aspirations and fears. Thus we must be prepared to come face to face with a woman who, on the one hand, had an almost existential fear of what "the folks back home" might think—and gossip—about her self-revelations, such as appear in *The Road to the Temple* (1927), and who, on the other, had no hesitation to speak out in public against the infringements of individual liberties, be they political (communism), social (feminism), or individual ("free love").

It is the undisputable advantage of this book that its author presents Susan Glaspell as a woman who does not become a convict of her convictions. Noe carefully avoids the trap of oversimplifying eulogy often met within biographies of so-called "secondary" writers. She presents a well-balanced account of Susan Glaspell as a literary artist who chose to write about the isms of her day for their topical value and not for their messianic message. Thus, Noe argues, it is incorrect to confiscate Glaspell into the ranks of "feminist" American writers of the twentieth century, even though she decidedly favors women to fill the roles of her protagonists. Equally incorrect, in Noe's judgement, is it to subsume Glaspell under the midwestern regionalists, even though many of her plays and some novels use the Iowa farmstead or midwestern small town community as their setting. There is a functional quality about these isms inherent in Glaspell's works—feminism, bohemianism, socialism, expatriatism, regionalism. Glaspell uses them as backdrop or medium to illuminate her central issue: the individual's moral obligation to know and be true to her (or his) self. In striking out at false and limiting isms, Noe accepts only one as a frame fitting Glaspell's concept: idealism. She even links Glaspellian idealism at one point directly to the German idealists Kant, Fichte, and Schelling, a suggestion which, however, would require further delineation to be wholly convincing. If Glaspell's heroines swim against the current of social norms in competing for the Apollinian ideal of "gnoti seauton"—here it must be taken for granted that Glaspell mused over this inscription on the temple of Apollo on Delphi while she and her husband George Cram Cook resided there in the early 1920s—such an idealism of seeking self-realization would most likely be of the gnostic type without its Christian overtone.

The inherent quality of Noe's biography of Susan Glaspell is that the book brings forth such questions even though it intends to perform quite a different task: to throw a light on the diverse unanswered questions about Susan Glaspell's life and career as a writer. Many answers are given, heretofore hidden away in volumes of unresearched manuscripts, notes and letters, and they are incorporated into a mostly homogeneous account of Glaspell's biographical and literary development, its climaxes as well as its failings. In her dedication to clarify for the modern reader hitherto muddled and partly mythicised details, Noe portrays these

phases: Glaspell's formative years in Davenport, her social acceptance by Davenport society, and her relationship to its cultural trend-setters; Glaspell's involvement as dramatist and actress with the Provincetown Players, and her gradual dissatisfaction with and final breaking away from them; the Glaspell-Cook relationship, uncritically glorified by Glaspell in her own account of her husband's life in *The Road to the Temple;* the Glaspell-Matson relationship, its literary limitations as well as the reasons for its premature end; Glaspell's literary interest and practical involvement in the Federal Theatre Project; and, finally her "Years Alone," years marked by failures real as well as imagined.

Noe writes with a threefold aim: to combine straightforward biographical narration with literary analysis and documentation. Biography and documentation are extensive. The reader is surprised to find so much of valued information in so condensed a volume. Literary analysis, admittedly of lesser concern in a book of this nature, comes out somewhat uneven, since more attention and space are allotted to it in the first half of the book (early stories, first novels, and complete dramatic writings excepting *Alison's House* and the collaboration with Matson), as compared to the second half which centers on Glaspell's—by this time more complex—personality as a writer dedicated to her own cause and that of other writers. In one respect the apparent need for condensation is critical (Noe's doctoral dissertation, on which the present volume is based, serves as reference here). If we agree to Noe's general concept that Glaspell's topical issues as presented in individual plays or novels usually coalign with a momentary "orientation" of the author hereself, then we logically assume that her literary output is a substratum of her life. Life and oeuvre are, in the case of Susan Glaspell, inseparably linked; the Provincetown phase, when Glaspell, who considered herself a novelist above everything, wrote nothing but—successful—plays for the stage, is ample evidence for the need of a close linkage of biographical accounting and literary evaluation.

Despite—or due to, as one might argue—its conciseness, this well-documented and nicely illustrated (8 full-page photographs) biography does credit to its subjects. Noe manages to convince the reader of her concluding argument that many of Glaspell's works are of interest to the modern reader because of their topicality and their timelessness in one. It also deserves attention because Glaspell's career mirrors the fate of many a modern writer in America: to be publicly denied and at the same time critically applauded.

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CLINTON, A PICTORIAL HISTORY. By Katherine Long and Melvin Erickson. Rock Island, Illinois: Quest, 1983. Pp. 200. $20.00.

As part of a renewed interest in community history, this book offers the reader an enjoyable reconstruction of the city of Clinton, Iowa. Hugging the Mississippi River, this city and its background are part of the western Illinois region. The authors highlight the period of the 1890s as the high point of the city's history when Clinton was "a sawdust town and a city of millionaires." (p. 46) Unfortunately, its decline is only mentioned. A short, introductory essay for each of the five chapters allows the nonresident to understand life in this city. Commentary appears with each of the 300 illustrations which are distributed unequally; almost one-third appear in Chapter 3 (1895-1919).

Within the scope of this book, the authors develop three pictorial essays, or integrated sequences of photographs on a specific topic. The first pictorial essay of roughly 1,000 words concerns Clinton's bridges: the 1859 railroad bridge, its iron replacement, the 1909 double-track bridge, the wagon bridge and the High Bridge of 1891 (pp. 91-94). Other essays concern the popular interurban trains (pp. 100-04) and river transportation: the "Zannetta," "Washington," "Sidney," and "J.S." were excursion boats of the early twentieth century (pp. 105-09). These pictorial essays add to the enjoyment of Chapter 3.

There are four noticeable shortcomings of the book. First, the original rivalry between Clinton and a nearby competing city, Lyons, is never analyzed, only referred to. The difficulty with this neglect shows up in the first chapter, which is divided into one section about Elijah Buell and Lyons (pp. 13-26) and another section about Clinton (pp. 27-44). Lyons High School persisted until 1954 and is mentioned later (pp. 66-67). This peculiar handling of the earliest period is unusual because Erickson had taught at Lyons High School before its closing. Second, the entire area of educational institutions is slighted. What was the Riverdale Institute of 1857-1880)? (p. 22). Did Wartburg or Mount St. Clare or Clinton Community College have any influence on the growth or values of the community? Third, the book persists in the illusion that the famous chanteuse, Lillian Russell, had a connection with the community (p. 111). It is true that she was born in Clinton on 4 December 1860, but she and her family moved soon after, when her father took a different newspaper position in Chicago. Fourth, if Marquis Childs was the most famous writer to come out of Clinton (even though he graduated from Lyons High School), then what were his experiences, memories, and impressions of the city?

Clearly some of these shortcomings suggest a historical agenda for the future narrative accounts of Clinton. Nevertheless, *Clinton, A Pictorial History* is a useful and attractive volume.

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